

## SWOT analysis for energy efficiency projects (final)

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## Preface

PROSPECT+, building on the previous H2020 project PROSPECT, will enable capacity building in regional and local authorities in order to finance and implement effective and efficient sustainable energy plans, including their proper monitoring and verification and also ensuring that such plans are using synergies from other local plans. The learning programme will advance through 5 learning modules covering public buildings, private buildings, public lighting, transport, and cross-sectoral topics. PROSPECT+ will focus on improving decision-making of cities in project selection for financing and assessment to ensure that their projects are finance ready. The ambition is to ensure that over 200 EU cities in at least 20 EU MS will improve their capacities when it comes to implementing projects from sustainable energy and climate plans (SECAPs) and similar sustainable plans.

## WHO WE ARE

	Participant Name	Short Name	Country	Logo
1	Institute for European Energy and Climate Policy Stichting	IEECP	NL	
2	European Federation of Agencies and Regions for Energy and the Environment	FEDARENE	BE	
3	EUROCITIES ASBL	EUROCITIES	BE	
4	Energy Cities/Energie-cites Association	ENC	FR	
5	University of Piraeus Research Center	UPRC	GR	
6	OÖ Energiesparverband	ESV	AT	
7	Energy agency of Podravje – Institution for sustainable energy use	ENERGAP	SI	
8	Tipperary Energy Agency	TEA	IE	
9	Ayuntamiento de Valladolid	INNOLID	ES	
10	Association of Energy Managers of Towns and Regions of the Czech Republic	SEMMO	CZ	
11	Adelphi research gemeinnützige GmbH	adelphi	DE	

## Executive Summary

As part of its overall climate goals, the European Union (EU) has pledged to be a net-zero greenhouse gas (GHG) emissions economy by 2050. A landmark is outlined in the 2030 Climate Target Plan, with a target of a 55% reduction in emissions against levels in 1990. Cities are having a central role in this change, responsible for nearly 70% of global energy consumption and a significant share of GHG emissions. At the same time, cities are also extremely exposed to the effects of climate change. According to a report by the C40 Cities published in 2020, big cities have the potential to cut emissions by up to 863 gigatonnes of CO<sub>2</sub>-equivalent by 2050 (Mark Watts et al., 2016). At the nexus of daily domestic practices and broad national policies, local and regional authorities are well-placed to deliver successful mitigation and adaptation strategies.

Despite the significant potential, small and medium-sized European cities still experiencing persistent bottlenecks in several steps of project design, financing, and implementation. These commonly include limited institutional capacity, restricted means, and insufficient expert technical knowledge. To bridge the gap, the PROSPECT+ project developed and implemented a targeted peer-to-peer capacity-building programme (CBP) that fosters learning and reinforces collaboration between local authorities and energy agencies. Through this learning approach, PROSPECT+ aimed at helping municipalities share practical experiences, enhance institutional capacities, and advance their sustainable energy ambitions.

This report draws on the findings of a comprehensive SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis for the implementation of sustainable energy projects, carried out within the scope of the PROSPECT+ project. To ensure consistency and depth, it brings together a mix of evidence from academic and grey literature complemented by empirical data gathered from those local/regional public officers, who engaged in the PROSPECT+ CBP across its four learning cycles. A formal online survey questionnaire was designed to that end, to capture those stakeholder perspectives on the frequency, that key barriers and enablers emerge in local sustainable energy initiatives, as well as their importance.

The survey received a total of 193 responses revealing several recurring patterns across the five PROSPECT+ thematic areas. Among the internal strengths, access to information, awareness, and technical know-how emerged consistently as major enablers of successful project implementation. Conversely, the most significant internal weaknesses were those related to high initial investments of the projects, the high complexity of procedures required as well as the lack of relevant resources within the organisations. Externally, the high energy prices, the existence of relevant regulations as well as long-term vision of the municipality for a sustainable future were rated among the greatest opportunities for accelerated implementation. On the other hand, excessive bureaucratic complexity and limited financial initiatives were viewed as the greatest threats, more often retarding or halting progress.

The analysis additionally identifies similarities as well as variations among the examined thematic sectors. The public buildings sector encounters challenges related to elevated initial



expenses, lack of resources and intricate procedures; however, with the existence of technical and non-technical know-how and anticipated savings are seen as strengths. The private building sector faces significant impediments, particularly financial constraints and resistance to change, while the derived savings and the increased comfort were identified as compelling incentives. In public lighting robust monitoring and verification mechanisms were seen as a clear asset, while high initial investments were envisioned as main hindrances. In transport, investment needs and infrastructure deficiencies still dominate, whereas the availability of technical capacities was viewed as a supportive driver. Cross-sectoral initiatives can be blocked by the lack of resources and bureaucratic processes; however, anticipated savings and reinforcement of available information can boost implementation.

To put our overall findings into perspective, the report concludes with important policy implications to guide and support the effectiveness and scalability of local energy transition initiatives throughout Europe and beyond. The structured yet adaptable set of these policy implications calls, among others, for ongoing support mechanisms, more inclusive financing arrangements, and an enabling policy framework complementing instead of counteracting local innovation. In doing so, they not only address the key barriers faced but also pave the way for stronger, more resilient local leadership in delivering Europe's long-term climate goals.

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**List of Abbreviations**

CBP	Capacity-building programme
EC	European Commission
EPC	Energy Performance Contracting
ESCO	Energy Service Company
EU	European Union
GHG	Greenhouse gases
M&V	Measurement and Verification
IEA	International Energy Agency
SEAPs	Sustainable Energy Action plans
SECAPs	Sustainable Energy and Climate Action plans
SUMPs	Sustainable Urban Mobility Plans
SWOT	Strengths-Weaknesses-Opportunities-Threats
UK	United Kingdom
WP	Work package

# 1 Introduction

## 1.1 Background and context

Cities are currently consuming around 70% of the global energy, being therefore major contributors to greenhouse gas (GHG) emissions accounting for more than 72% of the global GHGs (European Commission, 2020; van Staden, 2014). At the same time, 75% of the European population lives in cities, which makes them one of the biggest energy consumers and CO<sub>2</sub> emitters in the European Union (EU). However, despite being part of the problem, cities and regions may also be part of the solution and can act as key players in the way toward achieving the goal of the EU for climate neutrality by 2050.

Cities and regions can promote sustainable development by informing broader policies and concrete actions at the national level and worldwide, especially as they are best located in the interface between the individual and household level and the national and international level (Lombardi & Sonetti, 2017). Furthermore, they can contribute by complementing and reinforcing global climate policies through more “climate-conscious” urban action planning. And the good news is that most cities have already started to mobilise.

Since 2015, more than 10.000 cities have joined the Global Covenant of Mayors for climate and energy (IPCC, 2022). At the same time, many cities have already engaged in developing and implementing local climate plans, including Sustainable Energy Action plans (SEAPs), Sustainable Energy and Climate Action plans (SECAPs), and Sustainable Urban Mobility Plans (SUMP) or other types of relevant initiative, aiming to reduce their greenhouse gas emissions and achieve their sustainable energy goals (Huovila et al., 2022).

Despite the potential, this is not always an easy task, although large and powerful cities initiated CO<sub>2</sub> reduction activities, most small and medium size municipalities in Europe have not yet engaged in mitigation and adaptation initiatives (Alberti et al., 2019). In addition, local authorities often face challenges in several steps of projects’ planning, financing and implementation. Especially when it comes to financing, these barriers may include lack of knowledge of the different available innovative (or not) financing schemes, lack of capacity to secure financing or to identify and implement the financing schemes, or to demonstrate the creditworthiness and bankability of the planned investments (Caputo & Pasetti, 2015).

In addition, the need for and importance of educating cities’ personnel, and offering opportunities to work side-by-side and develop partnerships with other cities through peer-to-peer learning programmes, is highlighted in the literature. This would facilitate cities with less capacities to deepen their knowledge and establish cooperations with more experienced local authorities that have already faced and overcome barriers that emerge in the implementation of sustainable energy projects (Spyridaki et al., 2020).

The European Commission (EC)-funded Horizon 2020 project PROSPECT+ aims to respond to these needs by developing a unique capacity-building programme (CBP) that supports and encourages local and regional authorities to build comprehensive sustainable projects, and provides guidance to identify



and effectively solve the challenges and barriers they may face, when trying to implement their ambitious climate and energy plans. The project focuses on supporting local authorities to use innovative financing schemes, in order to reduce their need for own capital or subsidies. These innovative financing schemes include:

- Citizen finance (crowdfunding and cooperatives)
- Energy Performance Contracting (EPC)
- Internal contracting (intracting)
- Green Bonds (issued by local government or their agencies to fund their sustainable energy and climate actions)
- Guarantee funds (loan guarantees provided to lenders which serve as buffers against first losses of non-payment by the borrowers)
- Soft loans (loans below market rates and with longer payback periods derived from public funding to facilitate investments)
- Revolving funds (established to finance a continuing cycle of investments through initial amounts received from its shareholders) and
- Third party financing (debt financing where project financing comes from a third party, e.g., Energy Service Company (ESCO) which is not user or customer).

PROSPECT+ builds on the success of the previous H2020 PROSPECT project and employs a peer-to-peer learning approach to link representatives from public authorities in the EU, and to foster the exchange of existing knowledge. PROSPECT+ CBP is delivered upon five (5) thematic areas, namely, public building, private building, public lighting, transport, and cross-sectoral topics, takes place through four (4) learning cycles and employs three learning methods, peer mentoring (one-to-one relationship between a mentor and a mentee enabling counselling, deep learning exchanges, and joint problem-solving), study visit (a group of mentees learning from one mentor how the latter implemented his/her project and getting first-hand insights and recommendations), and local mentoring (refers to a study group in which participants are in the same country (or region), speaking the same language and having common backgrounds and plans).

## **1.2 Objectives and scope of the deliverable**

This report is the final of the two deliverables on Strengths, Weaknesses, Opportunities and Treats (SWOT) analysis for sustainable energy projects, under the PROSPECT+ Work Package (WP) 5 “Sustainable local energy planning and decision making”. It aims to present a SWOT analysis for the successful implementation of local sustainable energy actions. The analysis aims to investigate what are the negative (weaknesses and threats) and positive (strengths and opportunities) factors that affect the implementation of sustainable energy projects in the five thematic areas of PROSPECT+ and group them into broader categories, according to their nature (see Section 2.2).

The goal is to also include a quantitative aspect in the SWOT analysis, taking into account the perception of relevant stakeholders on the importance as well as on the frequency with which its elements emerge in the different contexts. The analysis will help decision-makers who are engaged in



sustainable energy projects in local or regional public authorities across Europe to better exploit opportunities and avoid those threats that can hinder the implementation of their projects.

To meet this goal, we followed a participatory multi-method approach, based on a literature review and stakeholder engagement in a semiquantitative assessment. In particular,

1. We conducted an extensive review of the barriers and drivers that emerge in sustainable energy projects in the five different thematic areas of PROSPECT+, meaning public buildings, private buildings, public lighting, transport and cross-sectoral activities.
2. Based on the insights from this review we allocated these factors into six broad categories, based on their nature, namely: economic and financial factors, knowledge and informational factors, social, cultural and behavioural factors, policy and regulatory factors, institutional/organisational factors and technical and technological factors. Then we analysed these factors based on their internal or external nature, to conclude to an initial SWOT analysis.
3. We developed a questionnaire that was transferred to an online survey and disseminated to PROSPECT+ CBP participants (both mentors and mentees), to collect their opinion on the SWOT factors identified. To design the questionnaire we listed the factors, differentiating into positive and negative ones and then we defined the particular assessment means and indicators (e.g., timeframe, rating system). The survey resulted in both adding a quantitative aspect to the SWOT analysis and validating the relevance of our initial findings.
4. We analysed the results of the survey per PROSPECT+ thematic area, taking into account the responses that we received from the participants of all four learning cycles of the PROSPECT+ CBP.
5. We concluded this report by summarising the work done, including possible limitations, and providing relevant policy implications.

### 1.3 Structure of the deliverable

The remaining part of this deliverable is structured as follows:

**Section 2** presents the methodology that was followed to perform the SWOT analysis.

**Section 3** includes a detailed overview of the barriers and drivers that emerge in sustainable energy projects in cities and regions, as a result of our literature review, and categorise the different factors into six broad categories.

**Section 4** presents the allocation of these factors based on their internal and external nature to formulate the initial SWOT analysis.

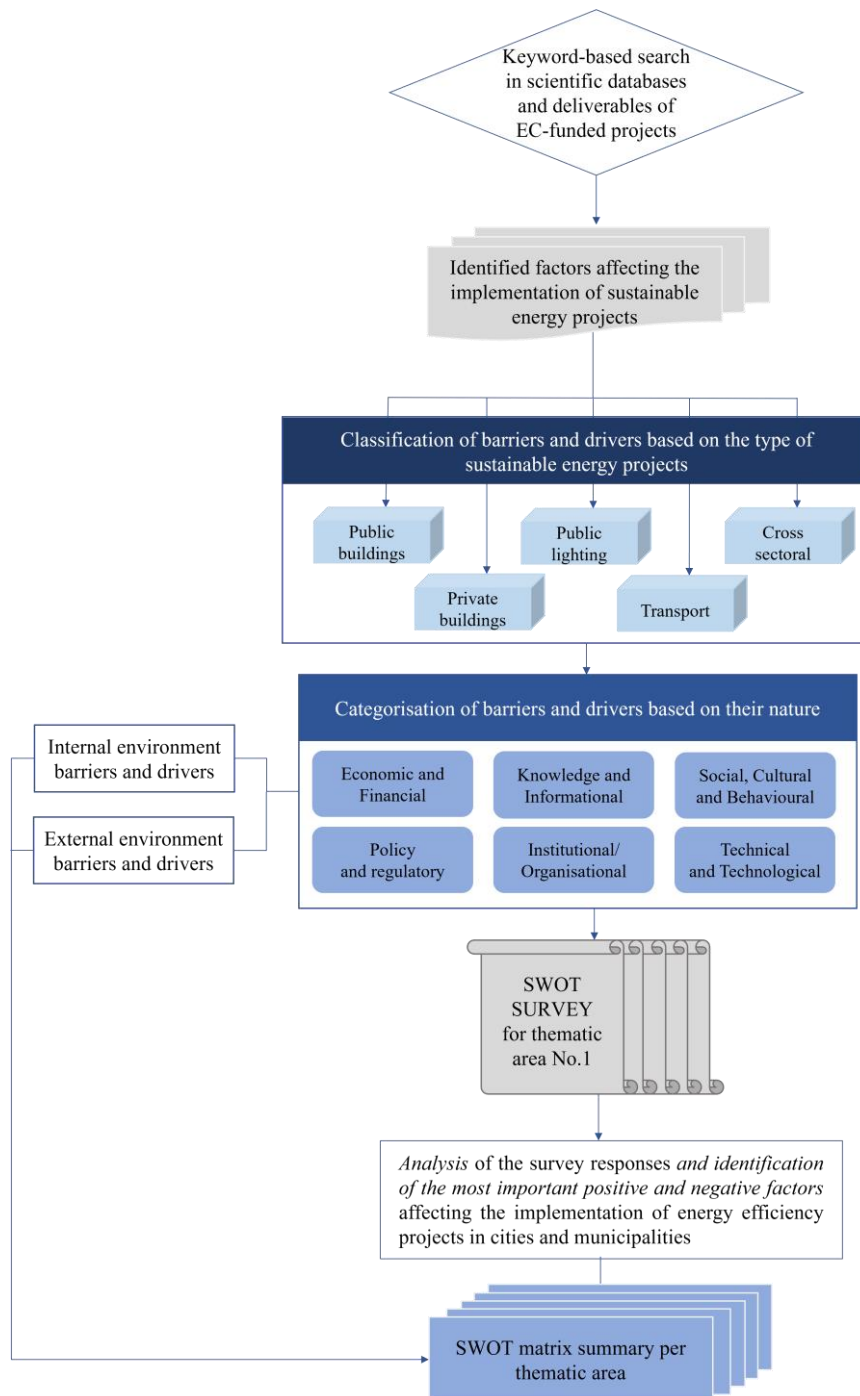
**Section 5** presents the stakeholder consultation process that was followed including the development of the survey used.

**Section 6** presents the results of our analysis per the five PROSPECT+ thematic areas based on the responses received.

**Section 7** discusses the main findings and relevant policy implications.

## 2 Methodology

This section presents the methodological approach that was employed to achieve the objectives and the goal of this study. The methodology consists of five main methodological steps (i) the desk research and classification of factors in thematic areas, (ii) the categorisation of barriers and drivers into six broad categories, (iii) the allocation of factors into strengths, weaknesses, opportunities, and threats, (iv) the development of a questionnaire, (v) the analysis of the data retrieved, (vi) the final SWOT analysis. These steps are visualised in **Figure 1**.



**Figure 1.** Methodological approach used to formulate the final SWOT matrix for each thematic area



## 2.1 Step 1: Desk research and classification of factors in thematic areas

We conducted an extensive review of relevant scientific and grey literature to identify a preliminary set of key factors affecting the implementation of sustainable energy projects by public authorities. Our aim was to identify both barriers that hinder the implementation of sustainable energy projects and drivers that facilitate their deployment. In the case of scientific literature, we conducted a keyword-based search of energy-related peer-reviewed journal articles in the “Science Direct” and “Google Scholar” databases, using relevant search keywords, e.g., “sustainable energy projects”, “energy efficiency projects”, “municipalities”, “cities”, “public buildings”, “private buildings”, “public lighting”, “transport”, “cross-sectoral measures”, “barriers”, “drivers”, “obstacles”, “EU”, etc., separately, or in different keyword combinations. Search results were constrained to the period 2012-2022. In the case of grey literature, the search process was centred around relevant technical reports and position papers to supplement existing scientific knowledge. For this case, search results were also constrained to the period 2012-2022. We also made use of research knowledge found in deliverables from the H2020 PROSPECT project as well as deliverables from other recent EU-funded projects of similar scopes, such as the Horizon 2020 projects, “HERON<sup>1</sup>” “Hotmaps<sup>2</sup>”, “PATH2LC<sup>3</sup>”, the Seventh Programme project “Sinfonia<sup>4</sup>” and the Intelligent Energy Europe programme project “ENTRANZE<sup>5</sup>”. The factors identified were classified depending on the type of sustainable energy projects in which they were identified in the five thematic areas of PROSPECT+ (public buildings, private buildings, public lighting, transport and cross-sectoral). The description of each thematic area is presented in **Figure 2**.

The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic area covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic area covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic area covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic area covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

**Figure 2.** Descriptions of PROSPECT+ thematic areas

<sup>1</sup> <https://heron2017.wordpress.com/project-overall/>

<sup>2</sup> <https://www.hotmaps-project.eu/>

<sup>3</sup> <https://www.path2lc.eu/>

<sup>4</sup> <http://www.sinfonia-smartcities.eu/en/project>

<sup>5</sup> <http://www.sinfonia-smartcities.eu/en/project>

## 2.2 Step 2: Categorisation of barriers and drivers

In a second step, the factors identified were grouped into six broad categories, based on their nature, namely (i) economic and financial factors, (ii) knowledge and informational factors, (iii) social, cultural and behavioural factors, (iv) policy and regulatory factors, (v) institutional/organisational factors and finally (vi) technical and technological factors. The categories were formulated after consulting the literature and are based on other taxonomies used in the field. Examples of other categorisations used in the literature are presented in **Table 1**.

**Table 1.** Taxonomies used for the categorisation of factors affecting the implementation of sustainable energy projects

Source	Taxonomies/ Categories	
(Wang et al., 2016)	- Economic	
	- Technical	
	- Government and Behavioral	
(EPEC, 2012)	- Technical	- Legal and institutional
	- Economic	
	- Budget	
(Bagaini et al., 2020)	- Economic	
	- Institutional	
	- Behavioural.	
(Cristino et al., 2021)	- Financial/Economic	- Professional/ Technical
	- Market	- Government/Political/ Regulatory
	- Technological	- Cultural/Social/Behavioural
(Kangas et al., 2018)	- Economic market failure	- Organisational
	- Economic market	- Institutional
	- Behavioural	
(P. Gupta et al., 2017)	- Economic and Financial	- Organisational and Social
	- Knowledge and learning	- Technological
	- Market related	
(Polzin et al., 2015)	- Technological	- Competencies and Capacities
	- Institutional	
	- Economic and Financial	
(Guno et al., 2021)	- Political	- Technological
	- Economic	- Legal
	- Social	- Environmental
(Bagaini et al., 2020)	- Economic	
	- Institutional	
	- Behavioural (incl. social, cultural and educational)	
(Addae et al., 2019)	- Financial	- Technology
	- Market	- Social
	- Policy	
(Mosannenzadeh et al., 2017)	- Policy	- Environmental
	- Administrative	- Technical
	- Legal and Regulatory	- Social
	- Financial	- Information and Awareness
	- Market	

### 2.3 Step 3: Allocation of factors into Strengths, Weaknesses, Opportunities and Threats.

To reach the overall goal of this study, the barriers and drivers derived from the previous steps were allocated into the four SWOT categories (strengths, weaknesses, opportunities and threats) according to their nature, i.e., depending on whether they are considered as internal or external factors to the project. Opportunities and threats include positive and negative external factors respectively, while strengths and weaknesses are the internal factors.

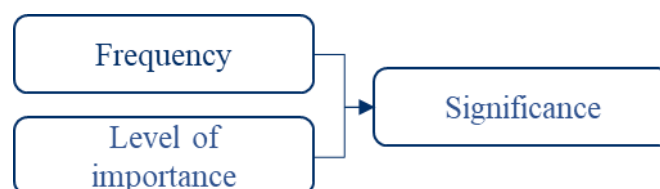
### 2.4 Step 4: Questionnaire

In order to increase the robustness of our analysis and to quantitatively assess the importance of each factor, a dedicated questionnaire was developed and made available online. The participants of PROSPECT+ were asked to fill in the survey during the duration of the capacity-building cycle in which they participated. Our aim was to collect feedback from a large number of stakeholders who are engaged in the planning and implementation of sustainable energy projects in municipalities. Thus, we collect feedback mainly from representatives of local and regional authorities and their energy/climate agencies.

### 2.5 Step 5: Data analysis

The collected responses to the questionnaire feed an analysis aiming at identifying the most important factors positively or negatively affecting the implementation of energy efficiency projects in cities and municipalities.

To conduct an overall assessment of the different barriers and drivers for sustainable energy projects in the EU context, we use two indicators that are derived from the questionnaire. These are i) the frequency that a barrier/ driver appears and ii) the level of importance of the barrier/driver as perceived by the participants. For example, if a barrier/driver appears in 7 out of the 40 responses the respective frequency would be  $7/40=0.175$ . The level of importance is derived from the structured questionnaire where a five-point Likert scale is used ranging from 1-not important at all to 5-very important. Finally, to prioritise the different positive and negative influential factors, each driver's or barrier's significance value is defined as the product of the number of times reported to appear (frequency) and its level of importance (**Figure 3**).



**Figure 3:** Graphical representation of the approach used to prioritise barriers and drivers in the implementation of sustainable energy projects



## 2.6 Step 6: Final SWOT

Finally, the allocation of the factors in the four SWOT categories (the result of Step 3) and the evaluation of the factors based on stakeholders' perceptions (the result of Step 5) are brought together to form the final SWOT matrix. The final result assesses also the overall internal and external environment and provides an indication of how easy or difficult it is for cities and municipalities to carry out sustainable energy projects. Overall, our SWOT analysis contributes to identifying challenges that should be considered, and opportunities that can be exploited, for the successful implementation of these activities.



### 3 Factors affecting the implementation of sustainable energy projects

As mentioned in Section 2 on **Cities** are currently consuming around 70% of the global energy, being therefore major contributors to greenhouse gas (GHG) emissions accounting for more than 72% of the global GHGs (European Commission, 2020; van Staden, 2014). At the same time, 75% of the European population lives in cities, which makes them one of the biggest energy consumers and CO<sub>2</sub> emitters in the European Union (EU). However, despite being part of the problem, cities and regions may also be part of the solution and can act as key players in the way toward achieving the goal of the EU for climate neutrality by 2050.

Cities and regions can promote sustainable development by informing broader policies and concrete actions at the national level and worldwide, especially as they are best located in the interface between the individual and household level and the national and international level (Lombardi & Sonetti, 2017). Furthermore, they can contribute by complementing and reinforcing global climate policies through more “climate-conscious” urban action planning. And the good news is that most cities have already started to mobilise.

Since 2015, more than 10.000 cities have joined the Global Covenant of Mayors for climate and energy (IPCC, 2022). At the same time, many cities have already engaged in developing and implementing local climate plans, including Sustainable Energy Action plans (SEAPs), Sustainable Energy and Climate Action plans (SECAPs), and Sustainable Urban Mobility Plans (SUMP) or other types of relevant initiative, aiming to reduce their greenhouse gas emissions and achieve their sustainable energy goals (Huovila et al., 2022).

Despite the potential, this is not always an easy task, although large and powerful cities initiated CO<sub>2</sub> reduction activities, most small and medium size municipalities in Europe have not yet engaged in mitigation and adaptation initiatives (Alberti et al., 2019). In addition, local authorities often face challenges in several steps of projects’ planning, financing and implementation. Especially when it comes to financing, these barriers may include lack of knowledge of the different available innovative (or not) financing schemes, lack of capacity to secure financing or to identify and implement the financing schemes, or to demonstrate the creditworthiness and bankability of the planned investments (Caputo & Pasetti, 2015).

In addition, the need for and importance of educating cities’ personnel, and offering opportunities to work side-by-side and develop partnerships with other cities through peer-to-peer learning programmes, is highlighted in the literature. This would facilitate cities with less capacities to deepen their knowledge and establish cooperations with more experienced local authorities that have already faced and overcome barriers that emerge in the implementation of sustainable energy projects (Spyridaki et al., 2020).

The European Commission (EC)-funded Horizon 2020 project PROSPECT+ aims to respond to these needs by developing a unique capacity-building programme (CBP) that supports and encourages local and regional authorities to build comprehensive sustainable projects, and provides guidance to identify and effectively solve the challenges and barriers they may face, when trying to implement their



ambitious climate and energy plans. The project focuses on supporting local authorities to use innovative financing schemes, in order to reduce their need for own capital or subsidies. These innovative financing schemes include:

- Citizen finance (crowdfunding and cooperatives)
- Energy Performance Contracting (EPC)
- Internal contracting (intracting)
- Green Bonds (issued by local government or their agencies to fund their sustainable energy and climate actions)
- Guarantee funds (loan guarantees provided to lenders which serve as buffers against first losses of non-payment by the borrowers)
- Soft loans (loans below market rates and with longer payback periods derived from public funding to facilitate investments)
- Revolving funds (established to finance a continuing cycle of investments through initial amounts received from its shareholders) and
- Third party financing (debt financing where project financing comes from a third party, e.g., Energy Service Company (ESCO) which is not user or customer).

PROSPECT+ builds on the success of the previous H2020 PROSPECT project and employs a peer-to-peer learning approach to link representatives from public authorities in the EU, and to foster the exchange of existing knowledge. PROSPECT+ CBP is delivered upon five (5) thematic areas, namely, public building, private building, public lighting, transport, and cross-sectoral topics, takes place through four (4) learning cycles and employs three learning methods, peer mentoring (one-to-one relationship between a mentor and a mentee enabling counselling, deep learning exchanges, and joint problem-solving), study visit (a group of mentees learning from one mentor how the latter implemented his/her project and getting first-hand insights and recommendations), and local mentoring (refers to a study group in which participants are in the same country (or region), speaking the same language and having common backgrounds and plans).

### **3.1 Objectives and scope of the deliverable**

This report is the final of the two deliverables on Strengths, Weaknesses, Opportunities and Treats (SWOT) analysis for sustainable energy projects, under the PROSPECT+ Work Package (WP) 5 “Sustainable local energy planning and decision making”. It aims to present a SWOT analysis for the successful implementation of local sustainable energy actions. The analysis aims to investigate what are the negative (weaknesses and threats) and positive (strengths and opportunities) factors that affect the implementation of sustainable energy projects in the five thematic areas of PROSPECT+ and group them into broader categories, according to their nature (see Section 2.2).

The goal is to also include a quantitative aspect in the SWOT analysis, taking into account the perception of relevant stakeholders on the importance as well as on the frequency with which its elements emerge in the different contexts. The analysis will help decision-makers who are engaged in sustainable energy projects in local or regional public authorities across Europe to better exploit opportunities and avoid those threats that can hinder the implementation of their projects.

To meet this goal, we followed a participatory multi-method approach, based on a literature review and stakeholder engagement in a semiquantitative assessment. In particular,

6. We conducted an extensive review of the barriers and drivers that emerge in sustainable energy projects in the five different thematic areas of PROSPECT+, meaning public buildings, private buildings, public lighting, transport and cross-sectoral activities.
7. Based on the insights from this review we allocated these factors into six broad categories, based on their nature, namely: economic and financial factors, knowledge and informational factors, social, cultural and behavioural factors, policy and regulatory factors, institutional/organisational factors and technical and technological factors. Then we analysed these factors based on their internal or external nature, to conclude to an initial SWOT analysis.
8. We developed a questionnaire that was transferred to an online survey and disseminated to PROSPECT+ CBP participants (both mentors and mentees), to collect their opinion on the SWOT factors identified. To design the questionnaire we listed the factors, differentiating into positive and negative ones and then we defined the particular assessment means and indicators (e.g., timeframe, rating system). The survey resulted in both adding a quantitative aspect to the SWOT analysis and validating the relevance of our initial findings.
9. We analysed the results of the survey per PROSPECT+ thematic area, taking into account the responses that we received from the participants of all four learning cycles of the PROSPECT+ CBP.
10. We concluded this report by summarising the work done, including possible limitations, and providing relevant policy implications.

### 3.2 Structure of the deliverable

The remaining part of this deliverable is structured as follows:

**Section 2** presents the methodology that was followed to perform the SWOT analysis.

**Section 3** includes a detailed overview of the barriers and drivers that emerge in sustainable energy projects in cities and regions, as a result of our literature review, and categorise the different factors into six broad categories.

**Section 4** presents the allocation of these factors based on their internal and external nature to formulate the initial SWOT analysis.

**Section 5** presents the stakeholder consultation process that was followed including the development of the survey used.

**Section 6** presents the results of our analysis per the five PROSPECT+ thematic areas based on the responses received.

**Section 7** discusses the main findings and relevant policy implications.

Methodology, a literature review was carried out to identify the factors that can positively or negatively affect the implementation of sustainable energy projects, in each one of the five thematic areas of PROSPECT+. The outcome of this review is presented in this section, where the barriers and drivers found are assembled into six broad categories (i. economic and financial factors, ii. knowledge and



informational factors, iii. social, cultural and behavioural factors, iv. policy and regulatory factors, v. institutional/organisational factors and vi. technical and technological factors). The factors are presented neutralized, concerning their positive or negative effect, these neutral categories can be considered either as barriers or drivers depending on the different contexts. Then we present a brief description and discussion based on the review.

**Table 2.** Factors that positively or negatively affect the implementation of sustainable energy projects grouped into broader categories

	Public Buildings	Private Buildings	Public lighting	Transport	Cross sectoral
<b>Economic and financial factors</b>					
Availability of funding and access to funding sources	✓	✓	✓	✓	✓
Availability of resources	✓	✓	✓		
Initial investment and payback period	✓	✓	✓	✓	✓
Availability of (economic) incentives	✓	✓	✓	✓	✓
Split incentives and principal- agent problem	✓	✓	✓	✓	✓
Profitability	✓	✓			
Anticipated energy/ costs savings	✓	✓	✓		
Other costs (e.g., hidden and transaction costs)	✓	✓	✓	✓	✓
Interference in daily work	✓	✓			
Property value		✓			
Financial crisis	✓	✓		✓	
Energy prices	✓	✓		✓	
Socio-economic status of users		✓		✓	
Risks & uncertainty	✓	✓	✓		✓
<b>Knowledge and information factors</b>					
Information, knowledge and awareness	✓	✓	✓	✓	✓
Priority	✓	✓	✓	✓	✓
Mistrust	✓	✓		✓	✓
Dissemination and promotion	✓	✓			

<b>Social, cultural and behavioural factors</b>					
Resistance to change, inertia and lack of interest	✓	✓	✓	✓	✓
Public acceptance, social status consideration, social norms and group influence	✓	✓	✓	✓	
Bounded rationality	✓	✓			
Willingness	✓	✓			
Quality of life		✓			
Waiting for future savings			✓		
Reluctance, confidence in technology and past experience	✓	✓	✓		
<b>Policy and regulatory factors</b>					
Existence of regulation and legislation and/or conflicting policy	✓	✓	✓	✓	✓
Changes in legislation and/or regulatory framework	✓				
Existence of mandatory requirements and enforcement	✓	✓	✓		✓
Risks and uncertainty	✓	✓			
<b>Institutional/ Organisational factors</b>					
Institutional practice	✓		✓		
Streamlined processes and complex procedures	✓	✓	✓		
Bureaucracy	✓	✓			
Existence of a long-term vision, plans and strategies				✓	✓
Public budgeting practices	✓				
Management and government support	✓	✓			
Decision-making process	✓				
Partnerships					✓
Power	✓	✓			

Contractual lock-in			✓		
<b>Technical and technological factors</b>					
Availability of (technical) capacities and skills	✓	✓	✓		✓
Availability of guidance and best practices	✓	✓	✓	✓	✓
Complexity of projects and procedures			✓		
Infrastructure				✓	
Joint ownership	✓	✓		✓	
Availability of technology and maintenance capabilities	✓	✓			✓
Low satisfaction with public transport				✓	
Availability of data	✓	✓			
Technical problems and limitations (including geographical and logistical issues)	✓	✓		✓	✓
Measurement and verification of savings			✓		
Risks & uncertainty	✓	✓	✓		✓

### 3.3 Economic and financial factors

#### Availability of funding and access to funding sources

It is frequently stated in the literature that public authorities experience a lack of funding for the implementation of sustainable energy projects, as it is common that no dedicated funds exist for this kind of activities (Alam et al., 2019; Bertone et al., 2018). Even if there is available funding, the proportion of the budget that is dedicated to energy efficiency investments is relatively small (Gynther, 2016). In this respect, public entities might not be able to finance the entire investment using exclusively public funding, which results in the measures not being implemented (EPEC, 2012).

Furthermore, public entities face difficulties and limitations in borrowing from the private sector to fund public buildings energy conservation projects due to regulatory framework, while even when they are able to access this kind of funding, they tend to be hesitant against these agreements (Bertone et al., 2018). In addition, they face difficulties in obtaining financial support in the form of subsidies, grants and loans, as the application process is time-consuming. This is further burdened by the lack of relevant information regarding the available financial support and complex application procedures (Liu et al., 2020). Finally, investors often do not perceive energy efficiency projects in buildings as attractive investments, the availability of private funding is therefore limited (Cristino et al., 2021).

On the other hand, it has also been reported that secured funding acts as an important driver in the implementation of climate actions by municipalities (Coningsby & Behan, 2019). Thus, the availability or not of funding can act both positively and negatively on the implementation of sustainable energy projects while it has been reported as an influential factor in all five thematic areas of PROSPECT+.

#### Availability of resources

Besides the availability of funding, the availability of other resources is also important when it comes to planning and implementing sustainable energy projects. This may mean the lack of resources to assess opportunities (Bertone et al., 2018), the lack of time and effort to find information and appropriate support and to apply for loans/ subsidies (Ebrahimigharehbaghi et al., 2019). This is identified as a barrier to the implementation of projects in public and private buildings as well as in public lighting (Novikova et al., 2017).

#### Initial investment and payback period

An additional factor found to influence the decision to undertake a sustainable energy project is the initial investment required and its payback period. Yeatts et al. (2017) mention that in some cases the cost of the energy efficiency investment is prohibitively expensive, while Cristino et al. (2021) also highlight that the high investment required has a great impact on the adoption of energy efficiency technologies in buildings. In addition, the typical long payback period makes investors reluctant to invest in expensive equipment, which is often among the crucial barriers (Heiskanen et al., 2012; Wang et al., 2016).

When it comes to public lighting, Coningsby & Behan (2019), investigating the barriers and drivers in the deployment of LED street lighting, argue that the significant upfront investment in innovative technologies may be seen as unprofitable especially due to uncertainty regarding energy savings, while



Novikova et al. (2017) place the high upfront investment in the top three economic and financial barriers to energy efficient street lighting.

The high investment barrier has been also identified as a negative influential factor in transport measures (Guno et al., 2021; Lah, 2015), especially since energy-efficient products have a higher cost than conventional ones (Mavraki et al., 2015). More specifically, the high price and the long payback period have been identified as key barriers to the adoption of electric vehicles (R. Gupta et al., 2015; Hauptstock et al., 2015; Mavraki et al., 2015).

Finally, the initial investment barrier has been also identified in cross-sectoral measures in the corresponding PROSPECT handbook developed in the previous PROSPECT project but also in the reports produced by the H2020 [Hotmaps project](#) which investigated barriers and drivers towards the development of district heating networks in several municipalities across Europe (Albane & Favey, 2020; Draper et al., 2020; Martinez et al., 2020; O' Leary et al., 2020; Prohaska et al., 2020; PROSPECT, 2019; C. Simon et al., 2020).

#### Availability of (economic) incentives

Economic incentives are both a driver and a barrier to the implementation of energy projects. Receiving a financial reward from the government is argued to be one of the most important and effective methods for encouraging the implementation of energy efficiency technologies (Wang et al., 2016). On the other hand, Polzin et al. (2018) although started with the hypothesis that public support programs - including subsidies and other support schemes, - act as a driver for the implementation of novel technologies in street lighting, found in their analysis that there is no statistical significance among the two variables, and stated that support schemes do not play a role in encouraging local authorities to retrofit. In a study on how different barriers may affect the adoption of electric vehicles, Guno et al. (2021) illustrated that government subsidies and government public utility vehicles modernisation programs, which include subsidies and lower interest rate loans, act as drivers for most of the different stakeholder groups considered.

On the opposite side, the lack of economic incentives for the adoption of energy-saving technologies has been identified as an important obstacle in the literature for projects on public and private buildings, and transport. This factor emerges when governments do not offer financial support or economic incentives to embrace undertaking such technologies (Cristino et al., 2021). The reports of the H2020 HERON project on the social, economic, cultural and educational barriers identified the “lack of economic stimuli”, “not sufficient fiscal instruments” and “lack of support schemes” as factors hindering the diffusion of energy efficiency in buildings and transport. Furthermore, financial incentives are frequently dispersed inappropriately or are not targeting the appropriate audience (P. Gupta et al., 2017).

#### Split incentives and principal-agent problem

In the public sector, split incentives arise when the entity implementing the investment cannot retain the monetary savings achieved due to the efficiency improvement. Instead, its operational expenditure budget is reduced in the following year. This is also mentioned in the literature as user/investor dilemma meaning that the department responsible for the investment and the one responsible for the



property management have competing interests when it comes to energy efficiency in buildings (Wang et al., 2016). The private buildings split incentives emerge in cases where the owner of the building will not reap all the financial benefits, but a share of them (e.g. higher sale value of the building), as a large part will be enjoyed by those who are using the building, while tenants have limited incentives to invest in energy efficiency as they may not have a clear idea of how long they will live in the property or they may plan to move soon (Bagaini et al., 2020; Castellazzi et al., 2017). This problem is also known in the literature as a landlord-tenant dilemma due to the contrary motives of the two parties.

Split incentives barrier is also identified in the street lighting retrofit projects. Novikova et al. (2017), investigating the context of several European countries, argue that the legal responsibility for ensuring proper public street lighting, ownership of the assets, maintenance and operation, and the actual investment decision, are assigned to different stakeholders. For example, although municipal governments are responsible for the proper lighting, they may not be the owners of the infrastructure. Thus, the split incentives problem may occur, as those who are going to upgrade street lighting will not gain the benefits of the investment.

In transport, Lah (2015) highlights the split incentives between the individual cost and the economy-wide benefit as a key factor hindering the improvement of the vehicle fleet's efficiency. More specifically it states that "*vehicle purchases are made by individuals who apply discount rates as high as 20 %, while most car buyers do not account for cost-savings from fuel efficiency beyond 2–3 years*". Also, there are other examples of conflicting financial interests among stakeholders, for instance, conflicts between citizens and local shop owners located within a proposed route area that could lead to energy efficiency improvements (shorter route, less time in a bus, etc), where the latter may complain to the local authority concerning disruption and harm of the business due to noise and reduced visibility of the shop (Mavraki et al., 2015).

### Profitability

A barrier that relates to private buildings and private structures in general is the fact that energy efficiency measures may not occur profit especially due to the large initial investment (P. Gupta et al., 2017). The authors also highlight the fact that improper evaluation of investment (including payback period, life cycle costing, etc.) may result in false estimates regarding the measures, while not taking into account the long-term energy savings may also contribute to the energy efficiency measures looking less profitable.

### Anticipated energy/ cost savings

The expected savings on energy costs is one of the economic factors motivating the implementation of energy measures. Castleberry et al. (2016) reported that cost-savings act as an incentive in the implementation of energy-saving technologies and practices in public schools and Wang et al., (2016) found that the savings on operational energy costs are the most highly regarded benefits of and incentives for increasing energy efficiency in public hospitals and healthcare facilities. Furthermore, a report from the ENTRANZE project placed the return on investment as one of the most important



decision criteria for several owner groups (e.g., public buildings, owner-occupied and rental office buildings, etc.) in different countries.

On the other hand, when it comes to public lighting, the anticipated energy/cost savings is found both a driver and a barrier to the implementation of energy efficiency measures. A large-scale survey of German municipalities found the factor to be a strong driver for a local authority to implement retrofitting activities (Polzin et al., 2018), while low energy cost savings due to either low energy prices or fixed energy bills was also reported as a barrier, in a study assessing street lighting upgrades taking input from multiple stakeholders (Novikova et al., 2017).

#### Other costs (e.g., hidden and transaction costs) and interference in daily work

Hidden and/or transaction costs refer to expenses that are indirectly involved in the construction or renovation of buildings and may include costs incurred from information searching, contract development or the monitoring of contractual agreements (Yeatts et al., 2017). These costs might not be visible in simple cost-effectiveness calculations and are therefore referred to as hidden costs (Persson & Grönkvist, 2015). When it comes to transport, running costs, the cost of domestic charging units and the high cost of batteries for electric vehicles are some of the costs that act as a barrier to the adoption of electric vehicles both for public and private transportation (Croci et al., 2015; R. Gupta et al., 2015). In addition to these costs, when it comes to buildings, there are also concerns regarding interference and disruption of the work routine (Heiskanen et al., 2012; Wang et al., 2016).

#### Property value

Energy-related improvements can increase the value of the property in which the measure is implemented. This driver is identified mainly in private buildings where Ebrahimigharehbaghi et al. (2019) found the increasing house value as one of the statistically significant driving factors toward the implementation of energy efficiency renovation.

#### Financial crisis

The financial crisis has affected both the demand and supply side of investments, as ongoing projects may experience delays, or planned projects may be postponed or cancelled due to the generally unfavourable conditions of the overall economy. The International Energy Agency (IEA) mentions in its report that businesses and households are spending less on energy-using appliances and vehicles due to the crisis and this has a negative effect on energy efficiency by delaying the deployment of more efficient equipment (IEA, 2009). We identified this factor mainly in the building and transport sectors.

#### Energy Prices

When it comes to energy prices, the findings of the literature review reveal information that may not be considered relevant taking into account the energy crises that we have been in since 2022, which was not projected earlier on. More specifically, there are several sources identifying the low or relatively low energy, fuel and electricity prices as a barrier to energy efficiency investments (EPEC, 2012; Guno et al., 2021; Ivezić et al., 2015; Kallaste et al., 2015; Persson & Grönkvist, 2015; Spassova, 2015). In addition, Ivezić et al. (2015) mention in their report that the citizens' belief that the electricity prices



will remain low is a social barrier for retrofitting activities, the more recent developments probably make this statement invalid at this point.

In the opposite situation, high energy prices are an incentive for the implementation of sustainable energy projects, as they can facilitate reducing the otherwise high energy costs. However, when it comes to transport, Guno et al. (2021) argue that high electricity prices may be a barrier to the adoption of electric vehicles. Overall, we have identified this factor mainly in the buildings and transport sectors as the instability of energy prices can have both a positive and a negative effect.

#### Socio-economic status of the project implementer

The socio-economic status of the implementer is highly related to the above factors related to the financial crisis in the economy. However, it concerns specifically the purchasing power of the implementer or the user and not the broader environment. This barrier is mentioned in studies on private buildings and transport in the literature (Bagaini et al., 2020; R. Gupta et al., 2015).

#### Risk & uncertainty

Besides all the factors identified under the economic and financial category, there are also related risks and uncertainties. Some examples can be financial risk and uncertainty regarding the overestimation of the savings and thus of the return on investment, and uncertainty on the resale value of the property (Alam et al., 2019; Heiskanen et al., 2012; Wang et al., 2016).

### **3.4 Knowledge/ information factors**

#### Information, knowledge and awareness

The availability of information, knowledge and awareness is another factor that has been identified in all the thematic areas examined, and also found to have both a positive and a negative effect on the implementation of energy efficiency investments. As highlighted by Alam et al. (2019) many governmental agencies are not educated or informed about the benefits of energy efficiency and energy efficient technologies. In addition, it is common for public building administrators to be unaware of the energy efficiency prospects in the buildings they manage (EPEC, 2012). There is also inadequate or lack of information on the available technology options and how these can be integrated into energy efficiency projects in buildings. Moreover, even if the information is available to the occupant, it is often difficult for them to analyse it (Cristino et al., 2021; Yeatts et al., 2017). Furthermore, according to P. Gupta et al. (2017) there are situations where users or people working on energy efficiency issues receive false or misleading information which acts as barriers to energy efficiency. Imperfect policy and cost information can also be hindering factors (Kangas et al., 2018). This means that actors may not be aware of potential funding sources and other policy instruments, while specifically for the public sector there might even be inadequate knowledge regarding the approval processes. In addition, available energy efficiency improvements may be neglected due to public officials' fear that their lack of knowledge of relevant legislation may lead to mistakes.

More specifically, concerning public lighting Novikova et al. (2017) identified the lack of awareness of potential funding sources and potential energy savings, as well as inadequate information regarding street lighting costs, as some of the barriers affecting their implementation. For transport, some of the



relevant barriers identified in the literature are the “lack or insufficiency of information and knowledge on the electric mobility and green transportation”, the “lack of awareness of fuel consumption and emission of vehicles”, the “limited awareness about actual travel costs of different modes” and the “low public awareness towards eco-driving” (R. Gupta et al., 2015; Hauptstock et al., 2015; HERON, 2017; Ivezić et al., 2015; Mavraki et al., 2015; Persson & Grönkvist, 2015; Spassova, 2015).

On another level, the lack of knowledge on energy efficiency by legislators and regulators can lead to the development of inappropriate legislation and regulations which is identified as another obstacle affecting energy efficiency investment (Cristino et al., 2021).

On the opposite, the availability of information, social awareness and information campaigns have been identified as a driver for the implementation of energy efficiency investment.

#### Priority

When energy efficiency retrofitting is not considered an activity of high priority for the entity, it usually falls to the bottom of the list. This is true for all commercial structures and not just for government facilities. There is usually no hurry or willingness to improve energy efficiency unless it is required (Alam et al., 2019). The fact that the budget dedicated to energy efficiency investments is usually small contributes to making this kind of activities a lower priority as the attention is placed on the larger budget items (Gynther, 2016).

#### Mistrust

The lack of trust in energy efficiency equipment is a hindering factor in energy efficiency technologies (Kangas et al., 2018), while mistrust also exists towards energy audits and measures proposed (Gynther, 2016). Finally, Heiskanen et al. (2012) highlight that competition between marketing claims for different alternatives may result in information mistrust.

#### Dissemination and promotion

Finally, the lack of efficient dissemination and promotion is an information barrier that hinders energy efficiency uptakes. Cristino et al. (2021) highlight that the government should enhance the mechanism of dissemination of the regulation and standards on buildings' energy efficiency, while, as mentioned in the first factor of this category, the implementation of promotional campaigns can have a positive effect.

### **3.5 Social, cultural and Behavioural factors**

#### Resistance to change, inertia and lack of interest

The lack of knowledge and information about energy efficiency may result in resistance towards this kind of investments and also towards behavioural changes needed to save energy (Cristino et al., 2021). If the energy-efficient technologies are not appealing to the potential user then it is less likely for them to be used, while factors that influence appeal include cultural and individual characteristics, reference groups and communication behaviours (Yeatts et al., 2017). Disinterest and inertia have also been identified as barriers to the implementation of energy efficiency projects (Heiskanen et al., 2012; Kangas et al., 2018).



### Public acceptance, social status consideration, social norms and group influence

Public acceptance, social status consideration, social norms and group influence are factors that can have both a positive and negative effect on the implementation of sustainable energy projects in almost all the thematic areas examined. The reports from the H2020 HERON project on barriers in buildings and transport investments identified lack of social approval, negative public perception, social group interactions and status considerations as barriers in all countries examined, including Estonia, Bulgaria, Greece, Italy, Germany, Serbia and the UK (Crocì et al., 2015; R. Gupta et al., 2015; Hauptstock et al., 2015; Ivezić et al., 2015; Kallaste et al., 2015; Mavraki et al., 2015; Spassova, 2015). Polzin et al. (2018), in their study on LED street lighting deployment from German local authorities, tested the hypothesis that low public acceptance prevents municipalities from engaging in retrofitting activities and validated this hypothesis.

The fact that possible investors may follow the acts of their peers and rely on their experience and feedback has been identified as a driver for homeowners' behaviour towards energy efficiency in the literature review of Ebrahimigharehbaghi et al. (2019). However, based on the statistical results performed in the same study, only a very small share of the respondents in their survey stated that indeed this is a driver for implementing such projects.

### Bounded rationality

Bounded rationality is the idea that individuals face limitations when making decisions. These limitations include both knowledge and cognitive capacity (H. A. Simon, 1990). In this respect, instead of pursuing an optimal solution, decision-makers operate as satisfiers searching for a satisfactory solution given the resources they now have. Although this kind of behavioural barrier has been studied mostly from individual's perspective, similar issues exist also for firms and organisations (Kangas et al., 2018).

### Willingness

Another factor that influences the implementation of sustainable energy projects is the willingness to implement the measure. In the literature, there are several sources mentioning unwillingness, including an unwillingness to finance energy efficiency technologies and to incur debt, in which case the barrier is not of a financial nature since financing may be accessible. For instance, "*the potential user either questions whether a particular energy-efficient technology is a good financial investment or has concluded that it is not*" (Heiskanen et al., 2012; Yeatts et al., 2017). Unwillingness may also lie in the lack of intention to replace systems and adopt new measures or to do more than the minimum requirements (R. Gupta et al., 2015; Ivezić et al., 2015; Mavraki et al., 2015).

### Quality of life

The enhancement of the quality of life, e.g. increased comfort, reduced noise, etc, is a driver for the implementation of energy efficiency projects, especially in the private building sector. Ebrahimigharehbaghi et al. (2019) in their analysis that aimed to describe the barriers and drivers of the implementation of energy efficiency measures, using data from Dutch homeowners, identified the desire to improve the quality of life as the primary motivator, compared to other drivers like for instance financial benefits.



### Waiting for future savings

When it comes to novel technologies there is a propensity to "wait" for upcoming advancements that will result in higher savings, this is also particularly pronounced at the municipal level (Polzin et al., 2018). Polzin et al. (2016, 2018) investigating the adoption of energy efficiency retrofitting activities in public lighting, using evidence from German municipalities, incorporated the possibility of waiting for future savings, or else waiting for improvements in energy efficiency technologies in their analyses. Although in their first study, focused on the use of EPC when implementing such projects, this barrier was not identified with high significance, in their second study this factor was indeed among those with statistical significance.

### Reluctance, confidence in technology and negative past experience

This factor is widely identified in the literature especially when it comes to public and private buildings but also to public lighting. The HERON project reports have identified as a barrier in the building sector the reluctance of the property owners to pay the initial investment for the renovation as well as the lack of confidence in the technology (R. Gupta et al., 2015; Ivezić et al., 2015; Mavraki et al., 2015). In addition, Novikova et al. (2017) identified as a barrier in public lighting activities, the reluctance towards new contractual and financing mechanisms as well as the influence of unfavourable past experiences with similar projects.

## **3.6 Policy and regulatory factors**

### Existence of regulation and legislation and/or conflicting policy

The regulatory and policy framework is an influential element toward energy efficiency investments. Wang et al. (2016) highlight the lack of national standards and regulations for energy efficiency in public hospitals and healthcare buildings, and point out that laws and regulations may be inadequate and lag behind the market. This factor includes also non-functioning regulation and lack of policy coherence (Cristino et al., 2021; Kangas et al., 2018).

### Changes in legislation and/ or regulatory framework

Another factor that can negatively influence the successful implementation of sustainable energy projects is frequent changes in the legislative and regulatory framework. In Bulgaria, regulation changes are frequently coming as a result of a shift in political parties. This legislation's ambiguity results in a decline in investments overall, including energy efficiency improvements in buildings (Spasova, 2015). In the study of Biresselioglu & Demir (2021) investigating the factors that affect sustainable energy planning, interviews highlight that the legislation poses a problem due to the constant changes and its complex structure.

### Existence of mandatory requirements and enforcement

Even if policies exist, the lack (or presence) of mandatory requirements and the extent of enforcement of the policy, is an additional factor influencing negatively (or positively) the implementation of energy efficiency investments. Alam et al. (2019) identified the lack of any mandatory requirement as one of the greatest obstacles in conducting energy efficiency assessments and upgrades. Unless there are mandatory requirements, there is usually an absence of a sense of urgency or desire to act toward



energy efficiency improvement. The lack of enforcement of retrofit policies, insufficient penalty mechanisms, and the absence of strong authority were also reported by Liu et al. (2020) and P. Gupta et al. (2017) as factors that can lead to energy efficiency not being implemented.

#### Risks & uncertainty

This factor is related to policy-related risks and uncertainties, that can be created due to changes in regulations or other factors such as the specific processes foreseen by the regulation itself. For example, one interviewee from the Kangas et al. (2018) study mentioned that *“If you want to get subsidies, you have to apply them in January- February, after that the money has run out. Thus, you don’t know if you will get the subsidies. So, I would claim that the public policy has mainly slowed down the progress, because the problem is also that you don’t know what will happen tomorrow. For us, it’s like trying to shoot a moving target.”*

### **3.7 Institutional/ Organisational factors**

#### Institutional practice

The institutional practice includes the organisation’s usual practice, and it has been identified as an issue that can hamper the implementation of energy efficiency investment in the public buildings sector (EPEC, 2012). This barrier is also identified by Alam et al. (2019) as one of the top barriers when it comes to procurement procedures.

#### Streamlined processes and complex procedures

The lack of streamlined processes for energy efficiency procurement is a barrier to such investments, especially since there is lack of clear guidelines outlining the processes and the procurement options for energy efficiency measures. In addition, there is usually a high complexity of these processes in the public sector (Alam et al., 2019). More specifically in public lighting, Polzin et al. (2015) identified the administrative approval procedures as one of the important factors affecting the uptake of LED technology for street lighting by municipalities.

#### Bureaucracy

In the building sector, both Mavraki et al. (2015) and Croci et al. (2015) identified the low-quality bureaucracy level as a hindering factor for the implementation of energy efficiency measures. In Italy, this may result in lack of transparency as well as adopters waiting for an extended period of time for authorization, while in Greece the barrier is highlighted as one of the main barriers in the implementation of publicly-funded projects in general. This barrier is also identified in other studies outside the EU, in countries that PROSPECT+ also targets. Such an example is the one of Biresselioglu & Demir (2021) who explored the factors that affect SECAPs using a case study of a metropolitan municipality in Turkey.

#### Existence of long-term vision, plans and strategies

The lack of long-term vision concerning the future of public infrastructure and the lack of sustainable mobility plans are highlighted as hindering factors in the implementation of sustainable energy projects in transport. HERON’s report for Bulgaria indicates the fact that only some large cities in the country



have SUMP is a barrier with medium impact, while the lack of vision for improvements in transport infrastructure is also presented in the report for Germany (Hauptstock et al., 2015; Spassova, 2015). On the other hand, the existence of clearly defined energy targets and goals at the municipal level can be considered as a driver in the cross sectoral thematic area (Draper et al., 2020; O' Leary et al., 2020).

#### Public budgeting practices

When it comes to public resources, it is common that many activities related to social services, environmental protection and energy efficiency compete over the same limited resources. This competitive funding model makes it difficult for public entities to secure funding for energy efficiency investments. In addition, public budgeting constraints make it challenging for public organisations to use savings in energy costs to finance energy efficiency investments (Alam et al., 2019; Gynther, 2016).

#### Management and Government support

Investments in energy retrofitting, as well as the establishment of necessary incentives and specific financing mechanisms, are hampered by a lack of high-management or state government support. In addition, the lack of support may act as an obstacle to raising awareness, and thus further perpetuates informational barriers (Alam et al., 2019).

#### Decision making process

Decision making process is also found to influence the implementation of energy efficiency projects. Decision making in municipalities is often subject to political aspects (Gynther, 2016), while collective decision making (where the number of people participating in the process is large, and the decisions are usually made without the necessary attention required in the life cycle costs) and the long term plan of the municipality may affect the energy efficiency investment decisions (Alam et al., 2019). Also, the lack of a cognitive decision-making approach, the fear of losing support from leadership or top management, differences in the perception of managers, and a complex decision-making chain in organizations, are identified as obstacles by (P. Gupta et al., 2017).

#### Partnership

Partnerships with other community organisations such as utilities, NGOs and conservation authorities can have a positive effect on the implementation of sustainable actions. Prohaska et al. (2020) highlighted that the collaboration of a local utility with housing companies can drive the implementation of energy efficiency and renewable heat supply projects in Frankfurt. In addition, Castleberry et al. (2016) who assessed drivers and barriers of energy-saving measures in public schools, argue that the feasibility of conservation measures depends on the school-community partnerships, which are case-specific.

#### Power

Based on the study of Kangas et al. (2018) power can be related to decisions regarding energy efficiency, as energy efficiency improvements may be hampered if the person responsible for these kinds of activities lacks power and influence within their organisation, to be able to initiate and then to implement them. In addition, in Bulgaria, Spassova (2015) states that the energy manager does not



have the required authority to implement the energy efficiency actions or to engage the appropriate stakeholders, and suggests that local authorities should grant these parties more power to implement sustainable energy actions.

#### Contractual lock-in

Contractual lock-in refers to contracts with existing suppliers being in place, and is identified as a barrier only in public lighting. The argument behind this factor is that the nature of some of these contracts may limit the choices of the municipality when it comes to alternative lighting solutions. Polzin et al. (2018) found a statistically significant negative relationship between the retrofit uptake and existing contracts, while in their previous study, they also found a significant negative relationship between existing contracts and the employment of energy performance contracting (EPC) to finance the retrofit uptake (Polzin et al., 2016).

### **3.8 Technical and technological factors**

#### Availability of (technical) capacities and skills

The lack of technical capacities and skills is one of the factors that have been most frequently identified in the literature as a hindering factor towards undertaking energy efficiency measures. This barrier includes the lack of skilled and experienced consultants that can be trusted i.e., to conduct thorough assessments of a building's energy efficiency and lack of skilled and experienced contractors for installing energy efficiency measures. In addition, the lack of technical capacities, competencies and professional knowledge and skills from public building owners do not allow understanding of the different energy efficiency measures and technologies (Alam et al., 2019; Cristino et al., 2021; EPEC, 2012; P. Gupta et al., 2017; Heiskanen et al., 2012).

#### Availability of guidance and best practices

The lack of guidance and best practices for the use of proven and trusted technologies has also a negative effect when accompanied by other barriers presented earlier like the lack of knowledge and skills, making it difficult for the agencies to put together a good business case for energy efficiency measures (Alam et al., 2019).

#### Complexity of projects and procedures

The complexity of projects and procedures is a barrier to the implementation of energy efficiency projects in public lighting, this may also include the complexity coming from the involvement of multiple stakeholders. More specifically Novikova et al. (2017) identified this factor among the three most important ones, when it comes to implementation capacity and procedures.

#### Infrastructure

Inefficient infrastructure in the transport sector is one of the important barriers to energy efficiency investments in the sector. It includes the lack of cycling infrastructure, the lack of rail infrastructure, road network problems (as highly utilised routes may have reached their capacity limit or other routes may have been cut off) (Hauptstock et al., 2015; Spassova, 2015), and the lack of infrastructure for electric mobility, as there is still a lack of adequate recharging areas (Crocì et al., 2015).



### Joint ownership

Shared ownership of public, as well as private buildings, poses a problem when it comes to undertaking energy efficiency refurbishments as it is often difficult for multiple stakeholders to find common ground to undertake the measures (Kallaste et al., 2015). When it comes to the transport sector, the management is often split among different departments, while there is also fragmentation of public transport operators or local traffic regulation, overall there is a lack of integrated governance and planning (Bagaini et al., 2020; Croci et al., 2015; Hauptstock et al., 2015; Kallaste et al., 2015; Mavraki et al., 2015).

### Availability of technology and maintenance capabilities

The lack of a specific energy efficient technology or the lack of maintenance capabilities hinders the implementation of measures. This barrier includes also the unavailability of energy efficient materials and the case of incompatible technology (Cristino et al., 2021; P. Gupta et al., 2017).

### Low satisfaction with public transport

The low satisfaction with public transport, which may include the belief that public transport is hazardous and less flexible than private transport, is identified as a relevant factor affecting the implementation of energy efficiency measures in the UK, Belgium and Italy (Bagaini et al., 2020; Croci et al., 2015).

### Availability of data

The availability of data is a requirement when planning the implementation of energy efficiency investments in public and private buildings. Despite this, the lack of data is often a problem preventing a thorough evaluation of building energy efficiency and resulting in benchmarking issues (Alam et al., 2019). Insufficient national statistics and poor regional and municipal energy statistics can also be barriers to the implementation of such activities in the building sector (Kallaste et al., 2015; Spassova, 2015).

### Technical problems and limitations (including geographical and logistic issues)

Technical limitations are access barriers, in the sense of external factors that can prevent the user from accessing the technology. It can be, for instance, the case of a region with low wind volumes where the development of wind energy would not make much sense (Yeatts et al., 2017). In addition, Bertone et al. (2018), Alam et al. (2019) and Yeatts et al. (2017) have identified the geographical and logistic challenges that may emerge in the procurement of energy efficiency products as factors that can negatively affect the implementation of sustainable measures. This barrier is identified in the areas of public and private buildings, transport and cross-sectoral activities.

### Measurement and verification of savings

The measurement and verification (M&V) of savings is a factor that can have both a positive and a negative influence on the implementation of energy efficiency measures in public lighting. Weak M&V approaches and lack of confidence in the approach employed can hinder their implementation



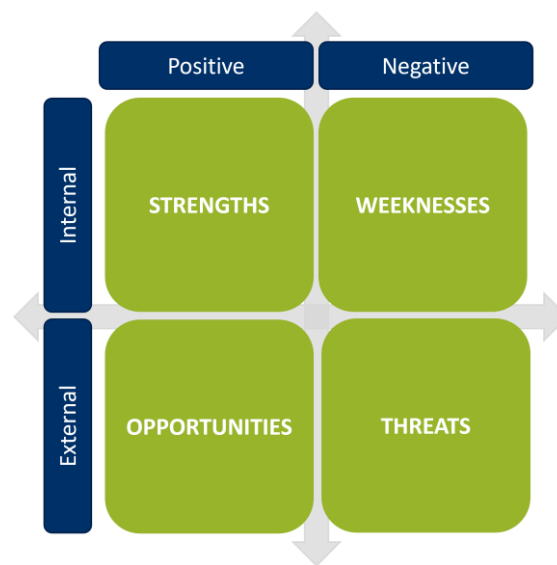
(Polzin et al., 2015; World Bank Group, 2014), while on the other hand, Polzin et al. (2018) found that proper M&V can have a significant positive impact in engaging with these measures.

Risks & uncertainty, difficulties in quantification

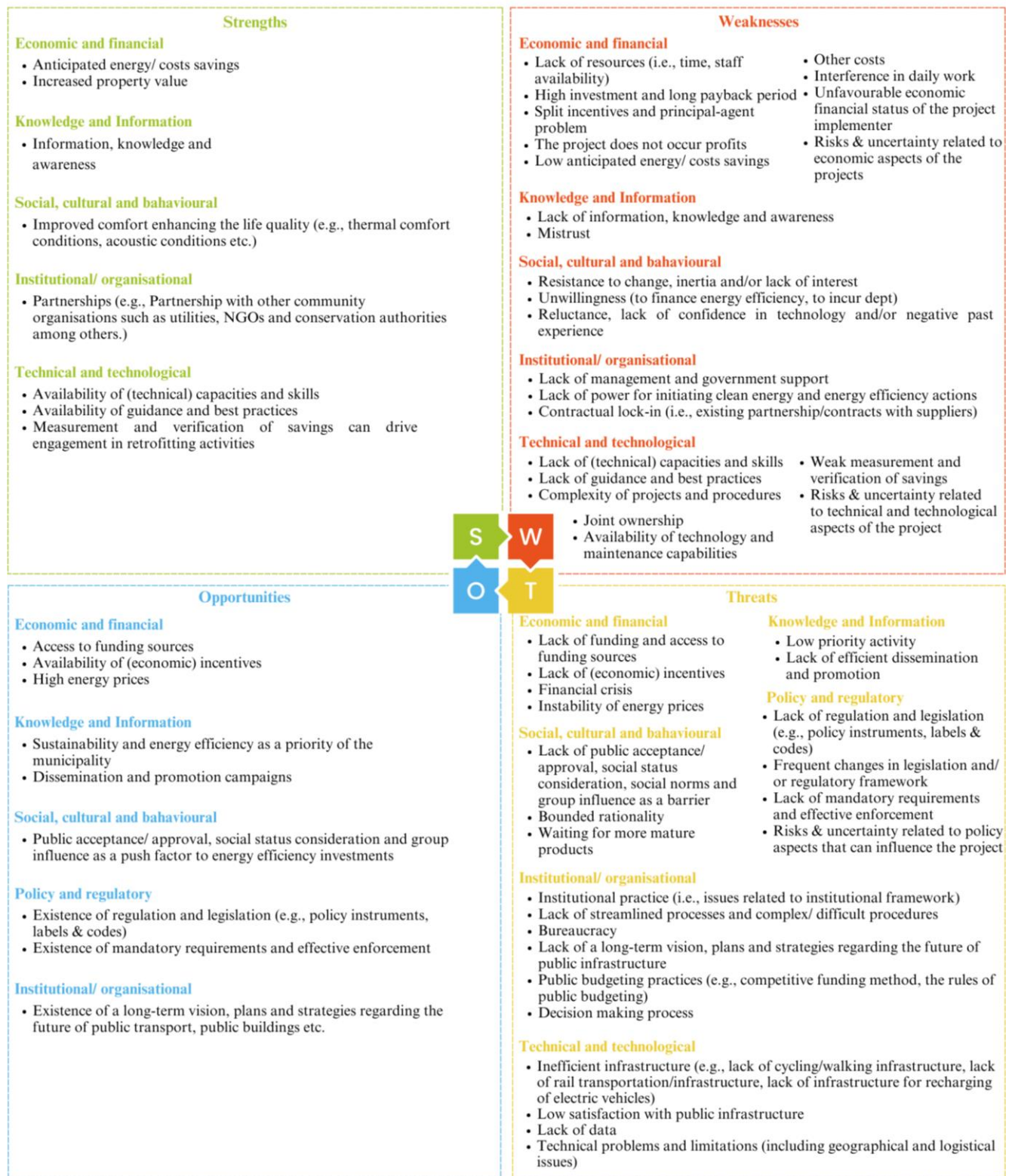
This factor includes all the technical-related risks and uncertainties, including the risks of failures in renovation and uncertainty related to M&V of energy saving, identified as a critical barrier in buildings energy renovations in several countries in the ENTRANZE Project (Heiskanen et al., 2012).

## 4 Strengths, Weaknesses, Opportunities and Threats

In this section, we aim to elaborate an initial SWOT analysis for sustainable energy projects taking into account the barriers and drivers presented in Section 3 on [Factors affecting the implementation of sustainable energy projects](#). In this respect, we allocated the factors into the four SWOT categories: strengths, weaknesses, opportunities and threats, based on their nature, meaning whether they are considered internal or external. In the present study, we consider aspects related to the projects themselves or internal to the municipality as the internal factors (or internal environment), while factors related to the broader environment of the country or region have been considered as external factors (external environment). The internal factors based on their favourable or unfavourable effects are categorised as strengths and weaknesses respectively, while the external factors are categorised as opportunities and threats accordingly. **Figure 5** presents the result of this process.



**Figure 4.** A typical SWOT analysis table



**Figure 5.** Allocation of internal and external factors that can positively or negatively affect the implementation of sustainable energy projects into strengths, weaknesses opportunities and threats

## 5 Stakeholder consultation

### 5.1 Survey development

The stakeholder consultation process consists of an online survey in the form of a structured questionnaire. The aim is to derive feedback from PROSPECT+ participants, both mentors (internal and external ones) and mentees, and obtain data that will be used for statistical analysis. The survey template is constructed on the initial findings from the literature review on different barriers and drivers emerging in sustainable energy projects in the five thematic areas of PROSPECT+.

The survey questions are grouped under 5 different sections. The first section collects information on the background of the respondent, including the organisation in which they are working (including country and region) and its type i.e., municipality, regional authority, energy/climate agency or other, their experience in energy efficiency and/or energy-related issues, their gender identity, their participation in planning and/or implementing sustainable energy measures, and their role in PROSPECT+ and PROSPECT (if any). The second section collects information regarding several city characteristics including the size measured in terms of the number of inhabitants, the background of the municipality in the development and implementation of sustainable energy plans and measures, as well as the thematic area for which the participant wishes to fill in the questionnaire. In this section, participants are also asked whether they are answering the questionnaire having in mind a specific project that has been implemented or is under development, or from their experience in the thematic area.

The third and fourth section collects participants' perceptions of the barriers and drivers that emerge in these activities. The factors presented are based on the literature review and are structured in the six broad categories, namely economic and financial, knowledge and informational, social, cultural and behavioural, policy and regulatory, institutional/organisational and technical and technological. Furthermore, most of them are not listed only for the thematic area in which they were identified in the review but for all thematic areas. This will allow us to assess to what extent factors that are found affecting projects' implementation in a specific thematic area in the literature, can also have an effect in other thematic areas. Exceptions in this generalisation are the barriers "the project does not occur profit" and "inefficient infrastructure", which will be only presented to respondents that fill in the survey for private building and transport respectively, and the driver "increased property value" which will be only presented to respondents that fill in the survey for private building.

In these two sections, the respondents are asked to answer two questions for each factor and thus two kinds of data are collected. The first one is on whether the factors exist as barriers (or drivers) hindering (or facilitating) the implementation of sustainable energy projects in their context and the eligible answers are "Yes" or "No". The second one is on the importance of the factors taking into account the degree to which they can affect the implementation of sustainable energy projects (regardless of whether this factor appeared in their project or not). This is measured on a five-point Likert scale (1= not important at all, it does not constrain the improvement of the project, 2= less than quite important, 3 = quite important, it delays or limits the improvement of the project, 4 = more than quite important, 5= very important, it is critical in preventing the implementation of the project). Furthermore, the

survey provides the opportunity to list additional factors that can hinder or drive implementation beyond those listed in the questionnaire, through open-ended questions.

Finally, the last section of the questionnaire asks PROSPECT+ participants whether they would like to receive feedback based on their answers and whether they would like more information on the results of the study.

The questionnaire was transferred to an online survey using EU survey. In this way, the cost of distributing the questionnaire is reduced while the possibility of disseminating the questionnaire to receive feedback from experts outside the PROSPECT+ participants is also allowed. The final questionnaire is available in Appendix I.

Finally, to serve the needs of the local groups implemented during the four learning cycles, the survey was also translated into the groups' languages, meaning French, Czech, Spanish, Italian and Bosnian. This task was performed using the AI automatically generated translation functionality in EU survey followed by a thorough revision from the project partners. The corresponding questionnaires are also available in Appendix I

## 5.2 Survey implementation and timeline

The EU Survey “*PROSPECT+ Survey on barriers and drivers in sustainable energy projects*” is filled in by mentors and mentees before the implementation of the third step (physical meeting) of each learning cycle. The link to the online survey is included in each group's Action Plan, while facilitators also send out reminders for the questionnaire to be filled in. In addition, we provided the participants of PROSPECT+ with a version of the questionnaire in PDF format so that they can get familiarized with the questions that they will be asked before starting to fill in the survey. This PDF version was for informational purposes only and all responses were collected only through the online survey.

The PROSPECT+ participants have the opportunity to receive a feedback report based on their answers to the questionnaire if they wish. Although our analysis considers general characteristics of the sustainable energy projects in the five thematic areas, while the factors affecting the implementation of the projects can be highly project-specific, this report can provide a first identification of the common barriers and drivers that occur due to the major aspects of projects, and can serve as a basis for more detailed analysis from the stakeholders. The analysis can assist participants in understanding the framework conditions for their case, and may also provide a direction for future actions or planning measures. In addition, the key graphs provided can (optionally) be used to kick-off discussions between the participants of the CBP and the facilitator during Step 4 of the learning cycle.

## 6 Results

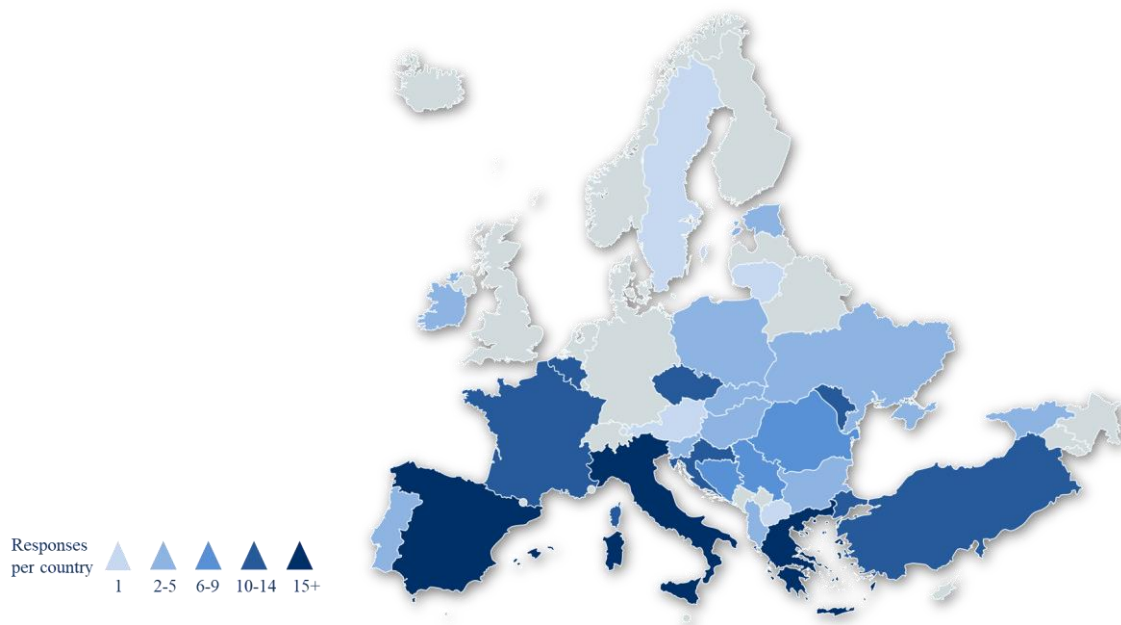
This section presents a synthesis of the main findings derived from the stakeholder consultation process. As previously described, the process involved a structured questionnaire-based online survey to derive input on how public authorities, specifically municipalities, regional authorities, and energy agencies perceive the implementation of SECAP or equivalent energy efficiency and/or sustainable energy actions for reducing greenhouse gas emissions across the five PROSPECT+ thematic areas.

The analysis that follows hereunder attempts to consolidate the views of the respondents who had actively participated in at least one of the PROSPECT+ CBP learning cycles. After a brief overview of their demographics, a city-level<sup>6</sup> profile scanning is conducted, considering inter-alia local expertise in planning and carrying out SECAP-related projects. Finally, the main strengths, weaknesses, opportunities and threats for accelerating clean energy transition in different sectors at the local level are summarised. This last part is discussed with respect to the different PROSPECT+ thematic areas separately.

### 6.1 Participants profile and demographics

The research sample for our SWOT analysis consists of responses coming from 193 stakeholders who have actively engaged in at least one of the four PROSPECT+ CBP learning cycles.

Our respondents represent 142 distinct organisations spread throughout approximately 131 different cities in 27 different countries.



**Figure 6.** Responses received per country

<sup>6</sup> The term "city" is used in our analysis to refer generally to all local and regional authorities that have urban characteristics, such as cities, towns, and urban areas.

Regarding gender distribution, our dataset includes responses from 88 females and 103 males, which makes a good gender balance. In addition, the options “other” and “prefer not to answer” were also available in the survey.

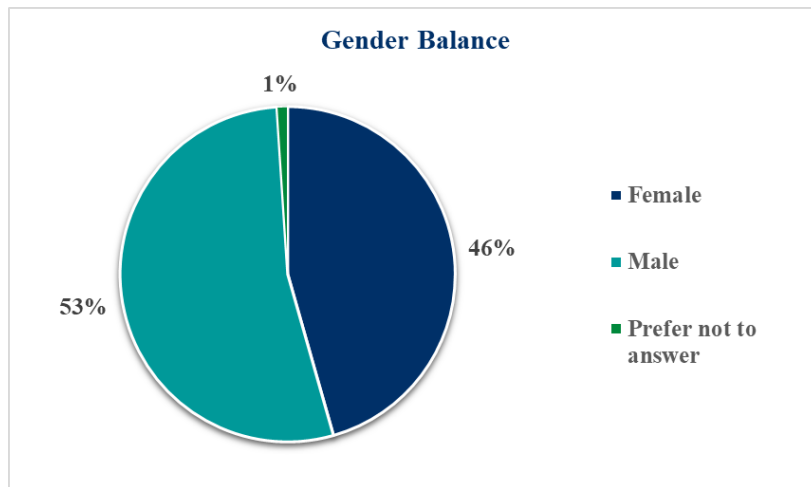


Figure 7. Gender of the participants

In terms of the respondents' professional backgrounds (Figure 8), the majority of them works for local/regional authorities (55%) and energy and climate agencies (21%), whereas a further 24% works for other relevant organisations, such as development agencies or research centres. As far as their competence goes, in their larger part (78%) they have specialised experience working on sustainable energy projects, while nearly half of them (45%) can be regarded as experts or specialists in their field due to their extensive working experience with energy efficiency and energy-related issues spanning over 6 years.

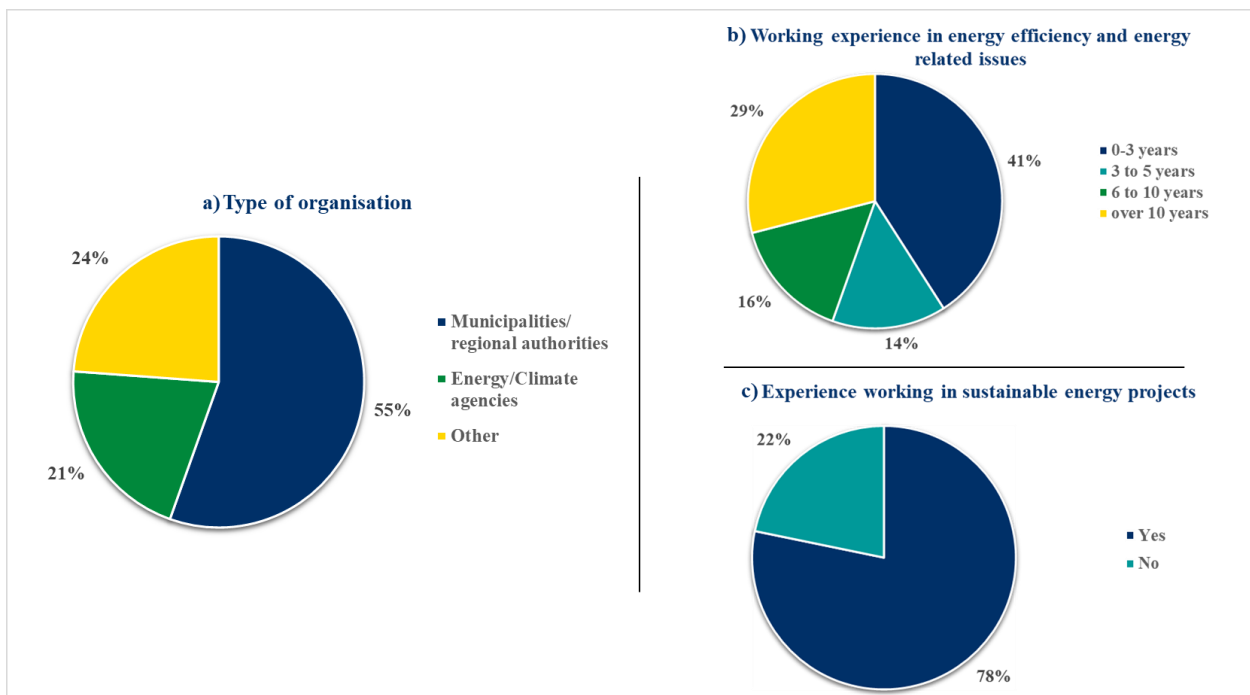


Figure 8. Respondents’ professional background a) Type of organisation they are working for, b) Working experience in energy efficiency and energy-related issues (years working in the field) c) Experience working in sustainable energy projects.

### 6.2.1 The background profile of the participating cities

As per a city-level analysis, the size of the municipalities in our research sample varies, ranging from very small and small/medium cities to different sized urban centres and metropolitan areas. More specifically, very small (<5.000 inhabitants) and small/medium cities (5.000-50.000 inhabitants) make up most of our sample (40% in total), followed by small (50.000-100.000 inhabitants) and medium sized (100.000-250.000 inhabitants) urban areas (31% in total), while large urban centres (250.000-1.000.000 inhabitants) and metropolitan areas (>1.000.000 inhabitants) account for 16% and 13% of the remaining 29% of our research sample, respectively.

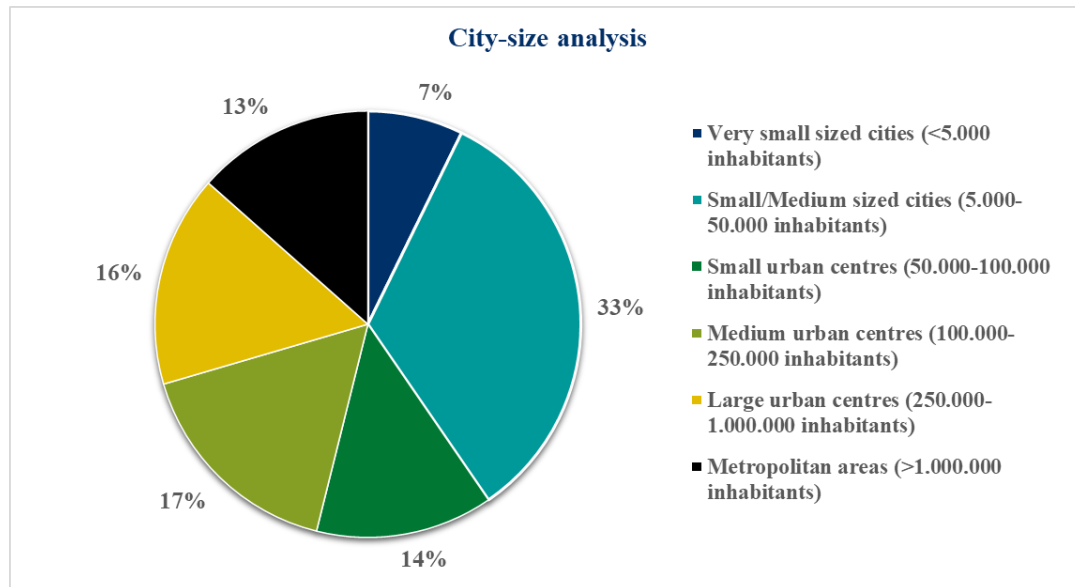


Figure 9. Participating cities’ size

Regardless of their size, most of the participating cities (72%) have adopted/developed a SECAP or equivalent plans (Figure 10), while the majority of our respondents (72%) answered the survey having a specific past or ongoing project in mind, related to one of the PROSPECT+ CBP thematic areas. The remaining 28% of our research sample, who did not have a specific project in mind at the time, provided their perspectives based on their professional experience working on SECAP-related projects.

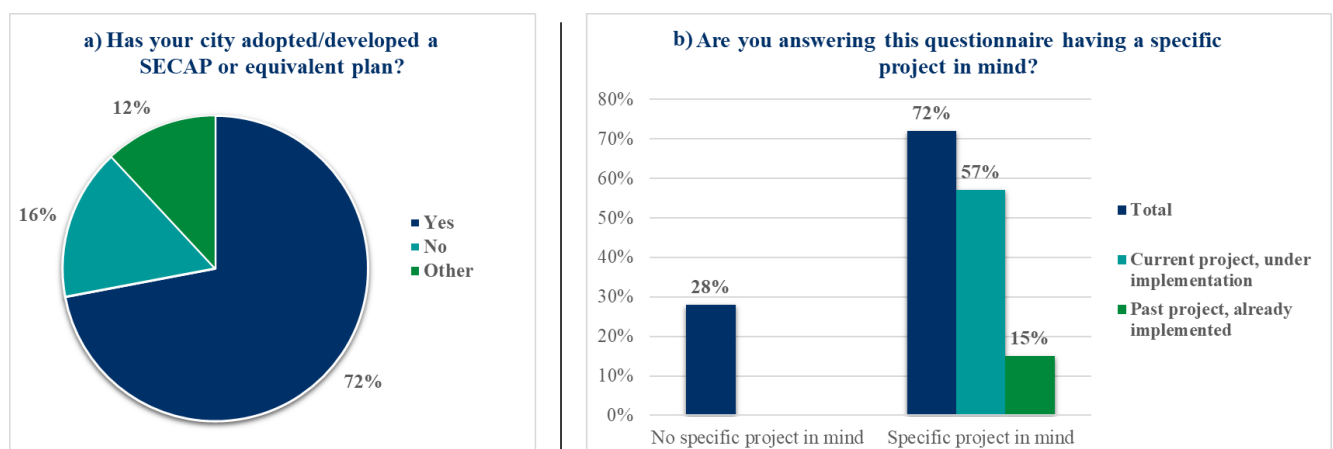
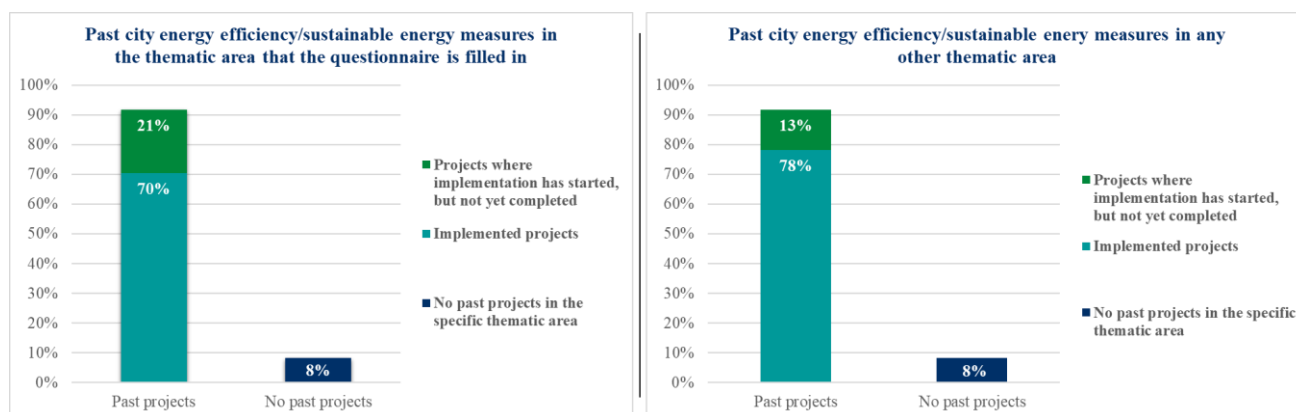


Figure 10. a) participating cities with a SECAPs or other equivalent plans, b) answers to the survey based on project-specific experience

### 6.2.2 Cities' experience with SECAP-related projects in each of the PROSPECT+ CBP thematic areas

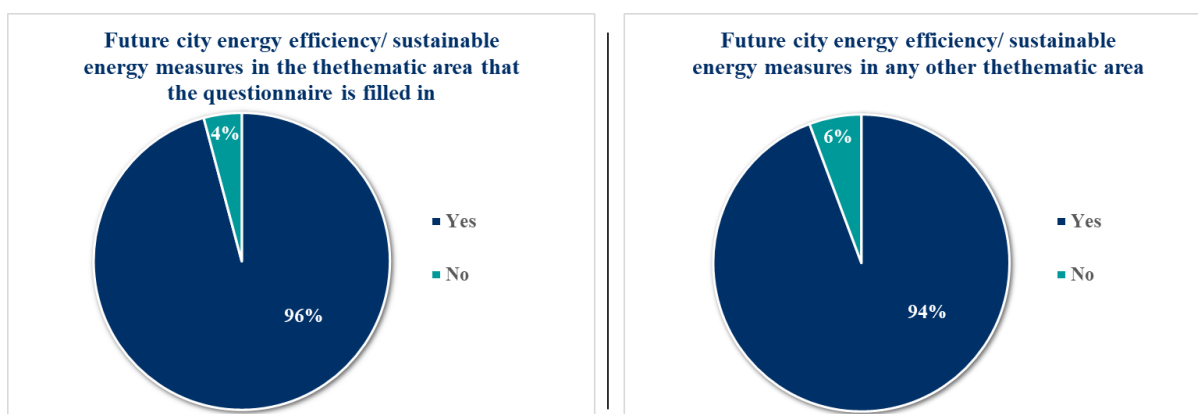
To further analyse participating cities' experiences with SECAP-related projects in sectors connected to the different PROSPECT+ CBP thematic areas, four relevant questions were posed: the first two covered projects initiated in the last five years or less, comprising measures with a clear focus on the thematic area chosen by the respondents, followed by measures across any of the other PROSPECT+ CBP thematic areas (**Figure 11**). The third and fourth questions were centered on the plans that participating cities have for the next two years (**Figure 12**).

Regarding past project experiences, measures specifically addressing the respondents' indicated thematic area are implemented in around 70% of the participating cities, while in 21% the measures have started but have not been completed yet, whereas only 8% of the participating cities have not taken corresponding measures on their territory. Similarly, most of the participating cities (78%) have carried out measures in alignment with any of the other PROSPECT+ CBP thematic areas, with only 13% of them being reported as still ongoing.



**Figure 11.** Cities' experience with projects across the PROSPECT+ CBP thematic areas in the last 5 years

In terms of their forward-looking plans, our sample cities seem driven to pursue a sustainable future, with almost all of them considering conducting at least one energy efficiency/sustainable energy measure in at least one of the PROSPECT+ CBP thematic areas in the following two years, either in the thematic area taken into consideration to fill out the survey (96%) or across the rest addressed by the project (94%).



**Figure 12.** Future city planning across the PROSPECT+ CBP thematic areas for the following 2 years

## 6.2 Analysis per thematic area

Sustainable energy and energy efficiency rank high on the European Union's agenda in today's energy transition. While these challenges can be tackled in many different areas, cities -where the majority of human activity and energy consumption are concentrated- represent a particularly fascinating test lab for such interventions<sup>7</sup>. However, cities vary extensively in capacity and performance to deal with climate change, and there remains very limited stock of concrete, comparative data, especially for small- and medium-sized cities, on how climate action can be effectively mainstreamed into urban planning processes.

Both scholarly and policy attention has focused on large metropolitan or so-called "mega-cities", which are often portrayed as the central actors in global climate governance (Bulkeley & Castán Broto, 2013; Di Leo & Salvia, 2017). Yet nearly half of the world's urban population lives in cities with fewer than 500,000 inhabitants, and thus attention needs to be focused on a broader research agenda that addresses the diverse capacities and issues of smaller urban areas (Hoppe et al., 2016). This shift in emphasis brings about basic inquiries concerning the terms on which cities of varying sizes engage in climate mitigation and adaptation, a matter that to a great extent has been unaddressed in policy and academic research.

This part of our analysis takes an exploratory multi-case stance in trying to come to terms with how local climate action is enabled, constrained, or strengthened in different urban settings. It presents the barriers and enablers to the capacity of cities to address climate change, based on the perceptions of small, medium-sized, and large local and regional authorities, adding also a quantitative aspect to the literature. The results are presented per thematic area of the PROSPECT+ project -public buildings, private buildings, public lighting, transport, and cross-sectoral actions. A summary table with the results for all factors across all thematic areas is available in Appendix II.

### 6.2.1 Public Building

Public buildings are the places where people conduct various public activities, including as of example office buildings, educational buildings, and healthcare facilities. Importantly, these buildings, including those at regional and local levels, make up 10% of the whole building stock in the EU (E3G, 2024). Due to their specificities, they usually consume large amounts of energy, making a significant impact on GHG emissions associated with the entire building sector (Balaras et al., 2024). On a positive note, public buildings' renovation is in the limelight at the moment, with several specific policies being in place, acknowledging among others the benefits of a climate-neutral public building stock<sup>8</sup> and the primary role that cities can play in this planning process<sup>9</sup> (Bertoldi & Mosconi, 2020; Brown, 2001). However, retrofitting existing public buildings is a complex process and there are several hindering

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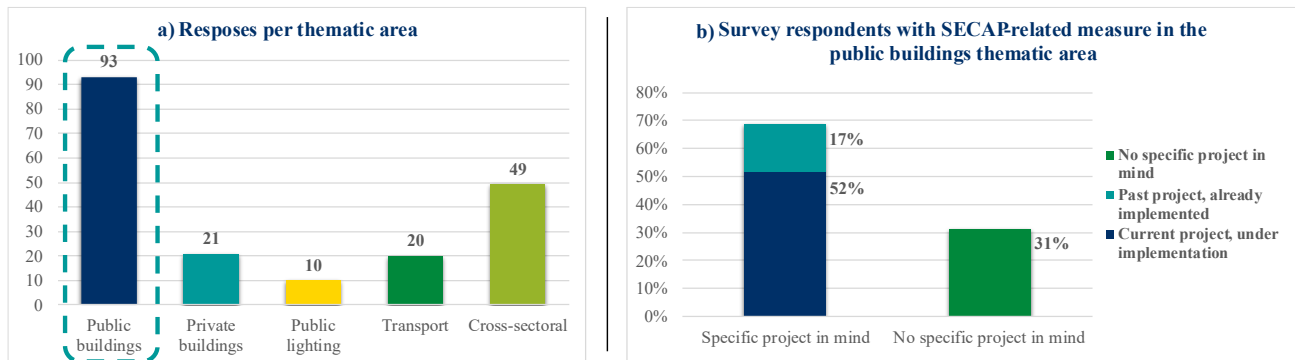
<sup>7</sup> European Environmental Agency. Available online: <https://www.eea.europa.eu/highlights/cities-play-pivotal-roles-in-1>

<sup>8</sup> See for example: European Commission. Available online: [https://commission.europa.eu/news/commission-proposes-new-energy-efficiency-directive-2021-07-14\\_en](https://commission.europa.eu/news/commission-proposes-new-energy-efficiency-directive-2021-07-14_en); BPIE (2019), Building renovation in the Clean Energy Package: implications at local, national and EU levels. Available online: [https://bpie.eu/wp-content/uploads/2020/01/Build-Upon2\\_Summary-of-implications-of-the-Clean-Energy-Package-on-National-Renovation-Strategies\\_FINAL\\_2020.pdf](https://bpie.eu/wp-content/uploads/2020/01/Build-Upon2_Summary-of-implications-of-the-Clean-Energy-Package-on-National-Renovation-Strategies_FINAL_2020.pdf)

<sup>9</sup> See for example: COM (2019), 640 Final. In The European Green Deal; European Commission: Brussels, Belgium, 2019. Available online: <https://www.eea.europa.eu/policy-documents/com-2019-640-final>; COM (2021), 609 Final. In European Missions; European Commission: Brussels, Belgium, 2021. Available online: <https://data.consilium.europa.eu/doc/document/ST-12347-2021-INIT/en/pdf>

factors that are currently blocking relevant initiatives from moving forward that require further investigation.

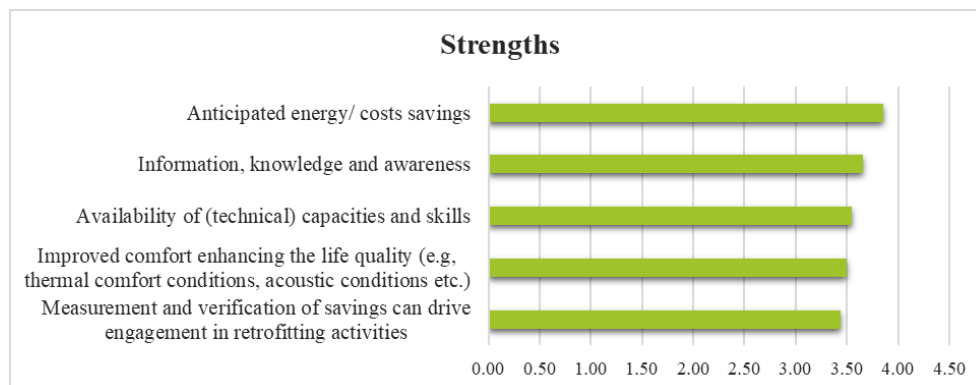
In our survey, 93 (48%) out of the 193 total responses concerned public buildings. The vast majority of those respondents (69%) had a specific project in mind, when filled out the questionnaire, either a past one that had already been completed (52%) or a still ongoing one (17%). The input of the remaining 31%, who at the time had no project in mind, was based on their professional experience working on SECAP-related projects.



**Figure 13.** a) responses per thematic area, b) answers to the public buildings thematic area based on project-specific experience

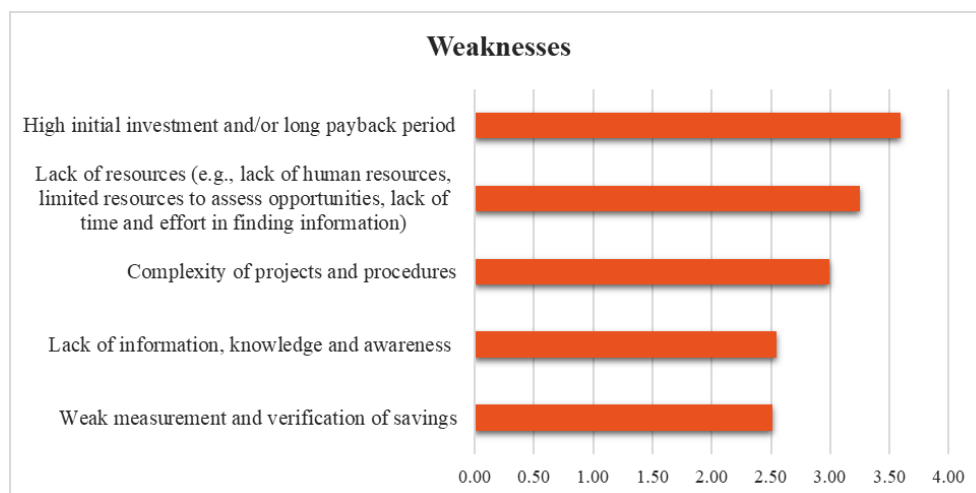
The focus of this section is to determine the significance value for each SWOT element in the public buildings thematic area considering the level of importance and frequency as perceived by the PROSPECT+ CBP participants, following the methodology presented in Section 2.5.

The following figure (**Figure 14**) presents the five most significant strengths in this thematic area as rated by the survey respondents. As shown, local actors perceive anticipated energy and cost savings and available information, knowledge and awareness among the staff of the organisation as the two most important strengths that can drive the implementation of sustainable energy actions. They also perceive the existence of technical capacities and skills as of high importance, while the improved comfort that the implementation of sustainable and energy efficiency measures can bring, enhancing the quality of life (e.g., thermal comfort conditions, acoustic conditions, etc.) is also among the key strengths. It is worth noticing that all five top strengths gained a significance value above three.



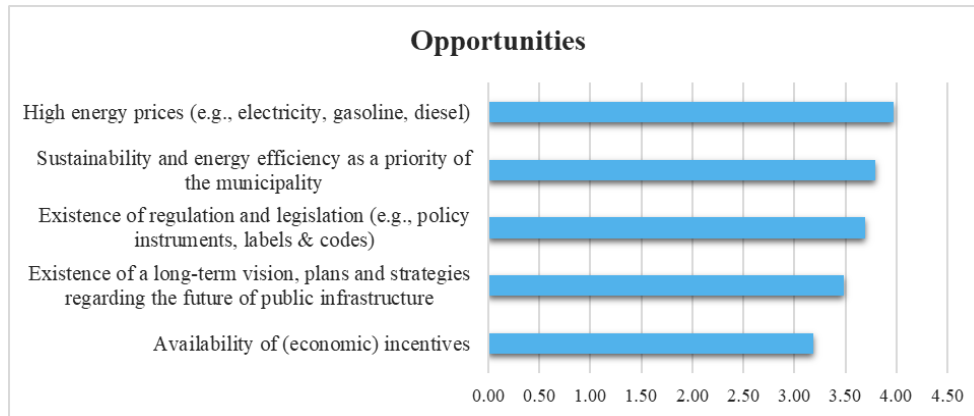
**Figure 14.** Top five strengths based on significance value in the public building thematic area

The high initial investment and long payback period that such projects may have is considered the most crucial financial and economic weakness, negatively affecting implementation, while the lack of resources (e.g., lack of human resources, limited resources to assess opportunities, lack of time and effort in finding information) follows (**Figure 15**). These two factors are the only weaknesses that gained a significance value above three in this thematic area. The complexity of projects and procedures ranked third, followed by the lack of information, knowledge and awareness. This last factor further enhances the importance and strong influence of the availability of information, considering that based on our results this particular factor, when exists can drive implementation, however, the lack of it can hinder it. Finally, through our analysis, we validate that weak measurement and verification procedures can also hinder the implementation of sustainability actions in public buildings.



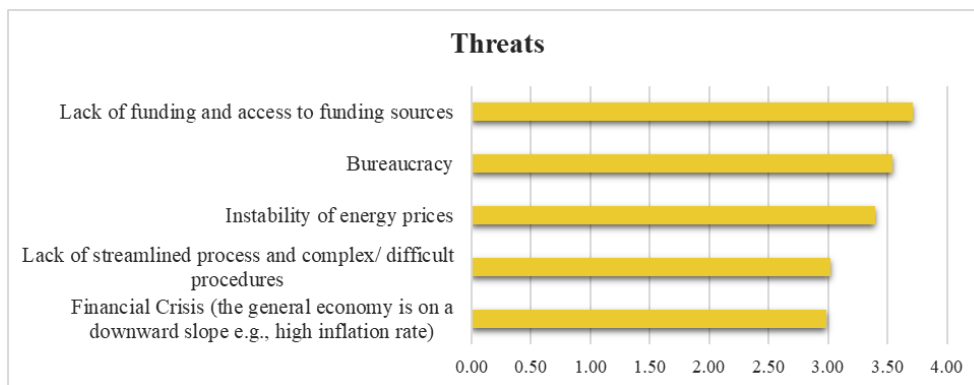
**Figure 15.** Top five weaknesses based on significance value in the public building thematic area

High energy prices (e.g., electricity, gasoline, diesel) is a key factor that can motivate public authorities to implement sustainability measures in public buildings. Ranking it as the most significant opportunity showcases that the increased prices of the past years have strongly affected the opinion of the local actors. It is worth noticing that in other earlier studies, low energy prices have been considered a barrier to the implementation of sustainable energy projects (Ivezić et al., 2015; Kallaste et al., 2015; Novikova et al., 2017; Spassova, 2015). In addition, putting sustainability and energy efficiency as a priority of the municipality, creates a breeding ground for the implementation of sustainable energy projects, according to the respondents, while the existence of facilitating regulations and legislations i.e., policy instruments, labels and codes have also a positive effect in driving delivery. Finally, the existence of a long-term vision, plans and strategies regarding the future of public infrastructure and the availability of (economic) incentives are the fourth and fifth most significant opportunities respectively, according to the responses received (**Figure 16**).



**Figure 16.** Top five opportunities based on significance value in the public building thematic area

The external economic and financial factors besides driving implementation, can also hinder it to a severe extent. In this context, the respondents have placed the lack of funding and access to funding sources as the most significant threat to sustainability actions in public buildings, the instability of energy prices that create uncertainty for the implementor as the third most significant threat and the overall negative state of the general economy as the fifth one. Second in the ranking comes the bureaucracy in several steps of the project implementation, while the fourth most significant threat is the lack of streamlined processes and complex or difficult procedures at the institutional/organizational level (**Figure 17**).



**Figure 17.** Top five threats based on significance value in the public building thematic area

Our overall results for the public building thematic area show that the SWOT element with the highest significance is “strengths”, followed by “opportunities”, “threats” and “weaknesses”, as shown in **Figure 18**.

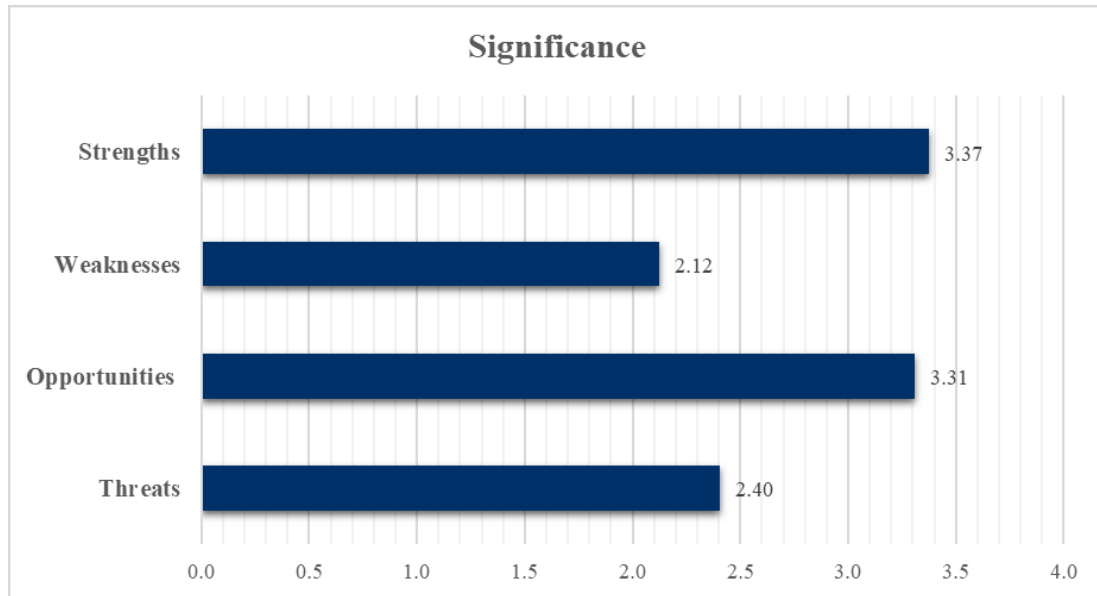


Figure 18. Significance of the SWOT categories in public buildings thematic area

The following graphs (Figure 19) present the results for each of the six different broad categories used to cluster all factors within strengths, weaknesses, opportunities and threats. Overall, the economic and financial is the most significant category under strengths and threats. Under weaknesses, the technical and technological category holds the first place in terms of average significance and under opportunities the institutional/ organisational holds the first place.

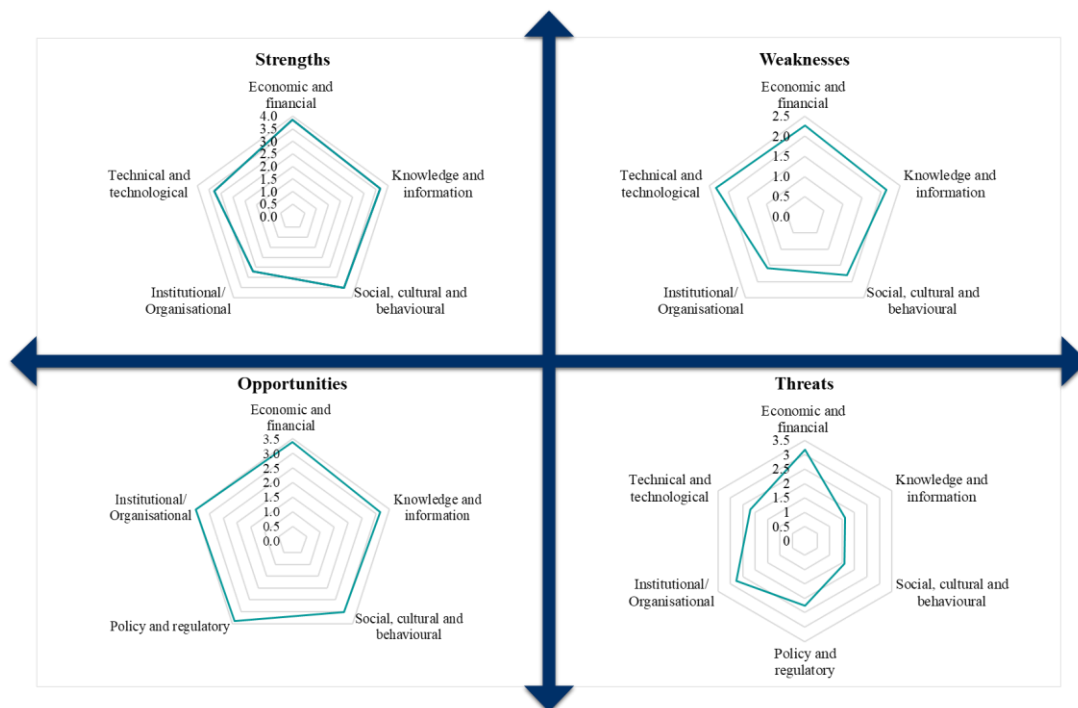


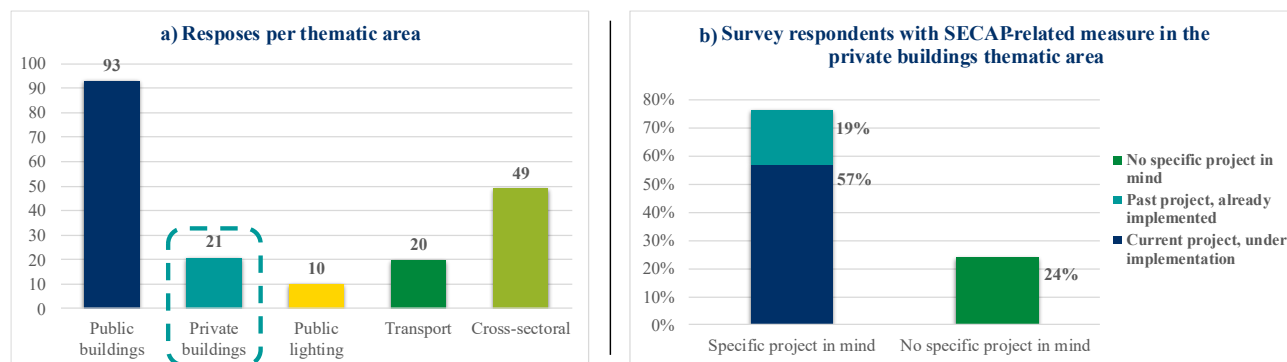
Figure 19. Graphical results of the significance of the six broad categories under SWOT elements based on findings of the online survey in the public buildings thematic area

## 6.2.2 Private Building

Private buildings in general cover all structures and establishments that are owned, managed, or controlled by private individuals or corporations. Tertiary sector (services), such as private companies, banks, commercial and retail activities as well as residential buildings, with social housing included, are all generally referred to as being part of the private building sector, which along with the public building sector, currently account for 42% of the EU's total energy consumption, 35% of energy-related GHG emissions and a significant share of air pollutant emissions (EEA, 2021, 2022, 2023). This creates an imperative for all new constructions to be carbon neutral, and for the existing ones to be renovated to improve their energy performance, if the EU's ambitious energy, climate and air quality targets are to be met by mid-century.

To address this challenge, the EU has introduced a targeted policy toolkit to encourage and ensure an efficient and sustainable transition of its built environment into a high energy performing one. Among others, the European Green Deal<sup>10</sup> and the Renovation Wave<sup>11</sup> initiative place a strong emphasis on reducing the energy use and environmental impact of the building sector, whereas the Energy Performance of Buildings Directive<sup>12</sup> was revised and amended in 2024.

Especially from a city-level perspective, private buildings are perceived as a challenging sector, despite its enormous potential to be a key component of a sustainable future. In our survey, 21 (11%) out of the responses concerned private buildings sector. The vast majority of respondents (76%) had a specific project in mind, when answering the survey, either a past one that had already been finished (57%) or one that is currently in progress (19%). Yet, the remaining 24% entered the survey without a specific project in mind; their responses drew from their working experience on SECAP-related projects.



**Figure 20.** a) responses per thematic area, b) answers to the private buildings thematic area based on project-specific experience

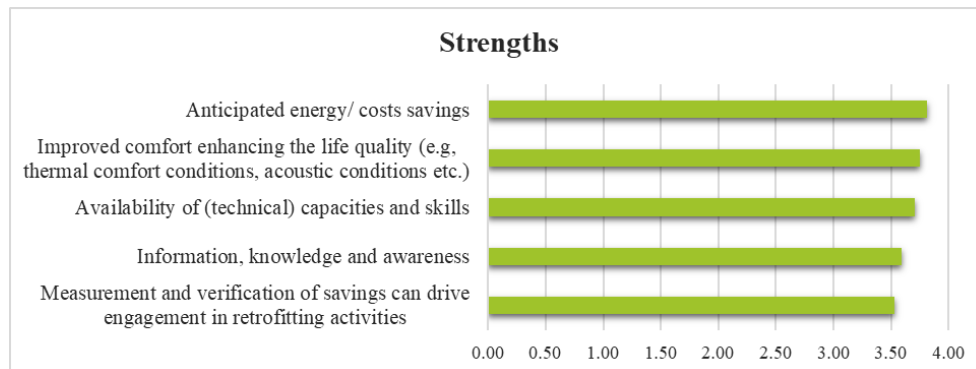
The anticipated energy and cost savings ranked as the most significant strength also in this thematic area. It is worth noticing that in this SWOT element, the same five factors as those in public buildings, emerge as the most significant ones based on participants' perspective, but in a slightly different order

<sup>10</sup> For more on the European Green Deal see here.

<sup>11</sup> For more on the Renovation Wave see here.

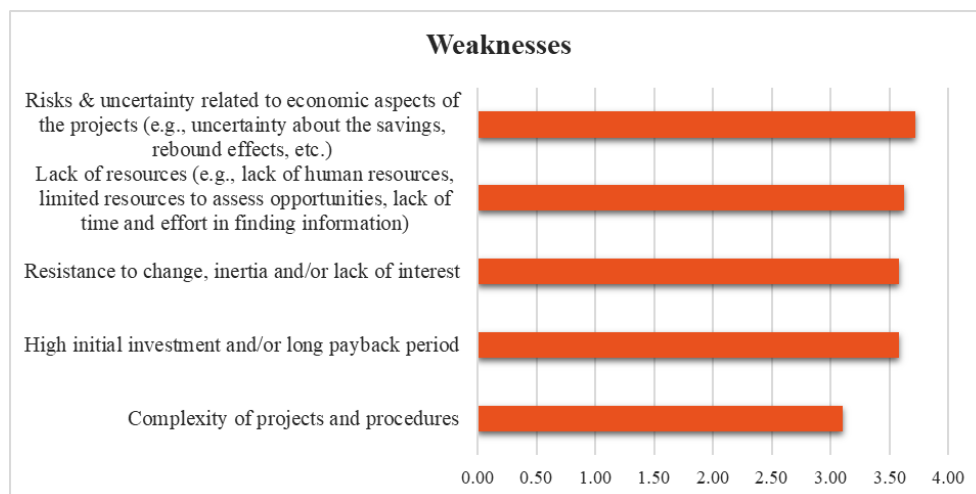
<sup>12</sup> For more on the revised Energy Performance of Buildings Directive see [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L\\_202401275&pk\\_keyword=Energy&pk\\_content=Directive](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401275&pk_keyword=Energy&pk_content=Directive)

with improved comfort that can enhance the quality of life ranking second and availability of information, knowledge and awareness ranking fourth (**Figure 21**).



**Figure 21.** Top five strengths based on significance value in the private building thematic area

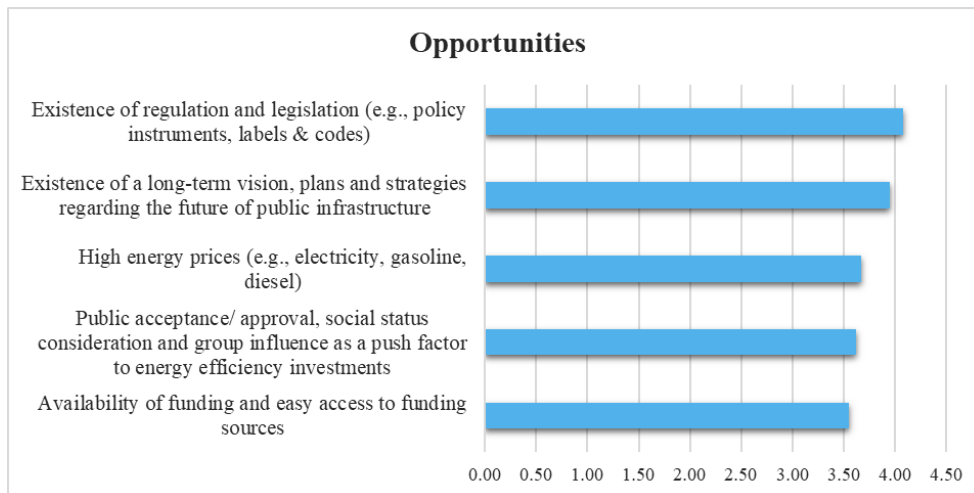
When it comes to weaknesses in private buildings the economic-related risks and uncertainties on savings, rebound effect, etc., is perceived as the most significant factor that can hinder the implementation of sustainable energy projects. As in public buildings, lack of resources, high initial investment and long payback period and the complexity of the project and procedures are again among the factors that received the higher rating in this SWOT element, although in different order as shown in **Figure 22**. Importantly, in private buildings, we notice the resistance to change, inertia and lack of interest as one of the most important weaknesses ranking third with a significance value well above three. It is worth highlighting that this factor is not among the top five weaknesses in any other thematic area.



**Figure 22.** Top five weaknesses based on significance value in the private building thematic area

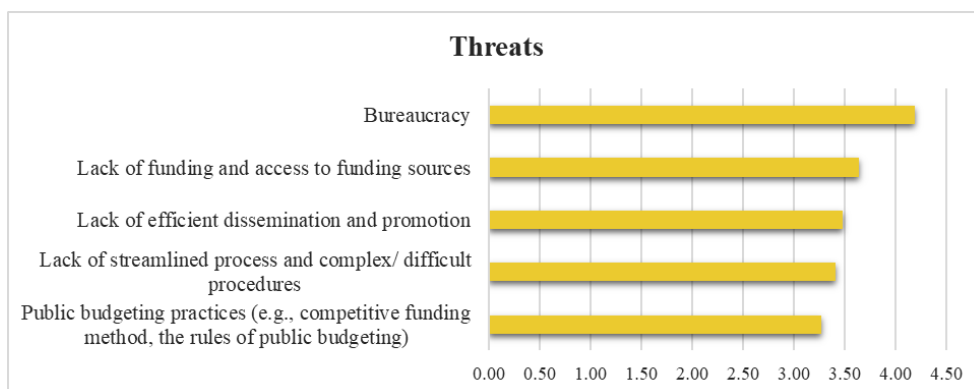
In private buildings, the existence of relevant regulations and legislations is the most significant opportunity that can be utilised to boost implementation, with a significance value above 4, which is one of the higher valuations across all factors both positive and negative, and across all thematic areas. The existence of a long-term vision, plan and/ or strategy regarding infrastructures is ranked second, while the high energy prices follows. Furthermore, public acceptance, social status consideration and group influence is perceived as an important opportunity that drives implementation and is ranked

fourth based on participants' responses, while not surprisingly the availability of funding and funding sources can expedite implementation and is ranked fifth (**Figure 23**).



**Figure 23.** Top five opportunities based on significance value in the private building thematic area

In threats, bureaucracy has ranked as the most significant hindrance to implementation in this thematic area, with a very high significance value, above 4, as shown in **Figure 24**. Again, here the lack of funding and access to funding plays a key role, ranking second across twenty-three factors. The lack of efficient dissemination and promotion regarding energy efficiency measures is ranked third. It is worth noticing that this factor is placed among the top five threats only in this particular thematic area. Following, the lack of streamlined processes and complex procedures and the public budget practices are ranked fourth and fifth respectively.



**Figure 24.** Top five threats based on significance value in the private building thematic area

The results for the private building thematic area illustrate the same ranking for the SWOT element as in public buildings, meaning that “strengths” have gained the highest significance followed by “opportunities” “threats” and “weaknesses” (**Figure 25**)

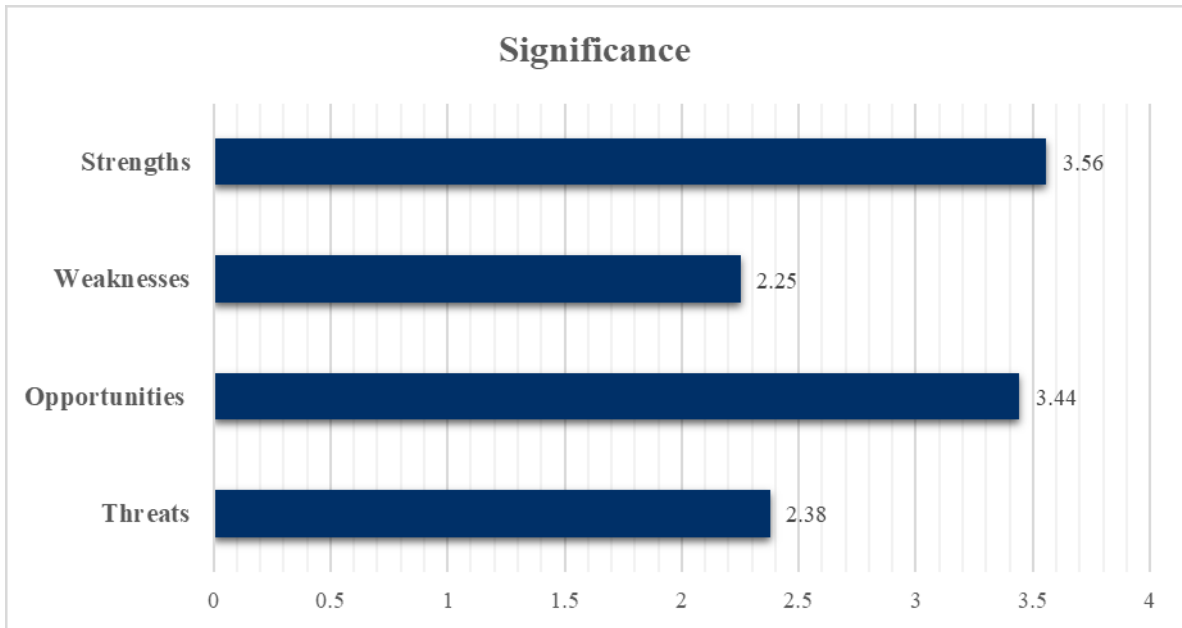


Figure 25. Significance of the SWOT categories in private buildings thematic area

When it comes to identifying the categories that gained the highest significance average under each SWOT element, social, cultural and behavioural aspects have gained the highest values in strengths, knowledge and information aspects have gained the highest value within weaknesses, institutional and organisational aspects placed first within opportunities and finally, economic and financial aspects where prioritized within threats (Figure 26).

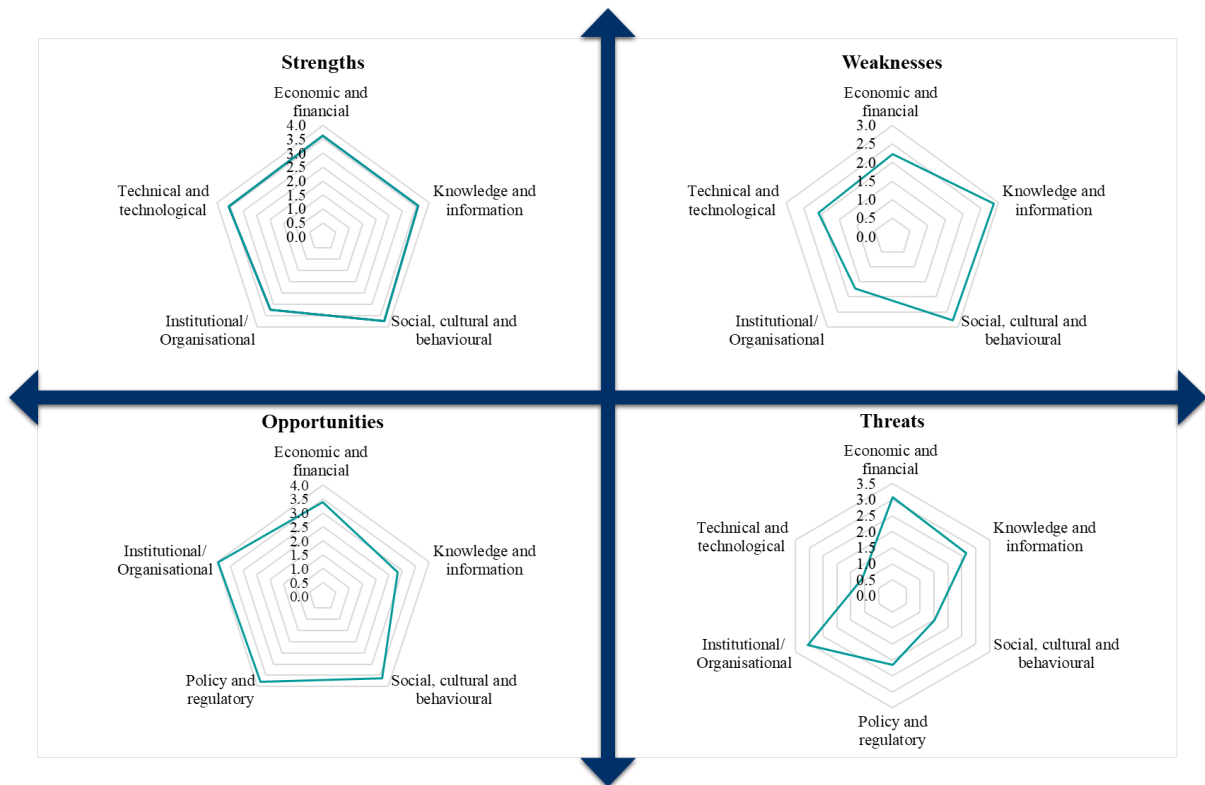


Figure 26. Graphical results of the significance of the six broad categories under SWOT elements based on findings of the online survey in the private buildings thematic area

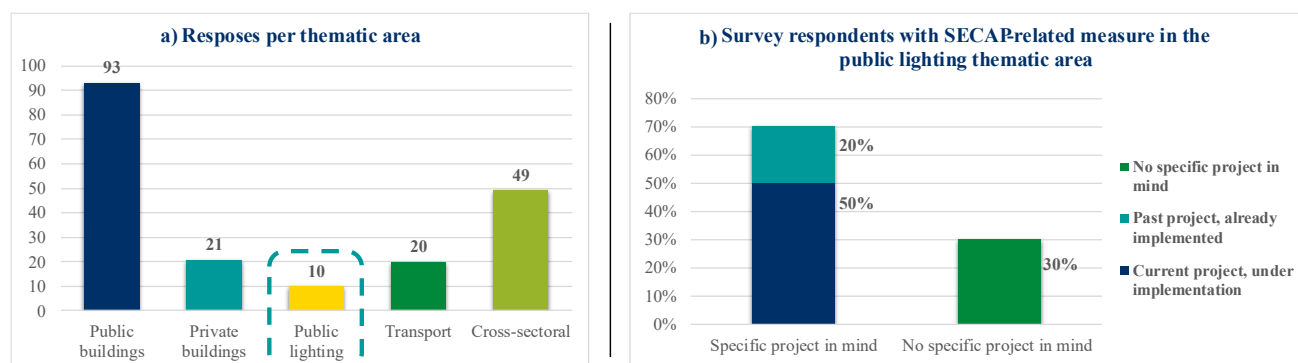
### 6.2.3 Public Lighting

The sector covers the provision of public lighting owned or operated by public authorities. As a general rule, it is regarded as a vital public service that affects social wellbeing on multiple levels from enabling road traffic safety to improving the sense of security on city streets, and a necessary condition for modern life (Mohandas et al., 2019; Sánchez-Balvás et al., 2021). However, the sector remains one of the most energy-intensive utilities being responsible for almost 40% of the energy consumed in European cities and for 30-50% of their energy bill (Pardo-Bosch et al., 2022).

In the context of the business-as-usual model which relies on supplying light throughout the night to ensure street visibility, outdated and inefficient technological infrastructure are among the main reasons for this high energy demand (OÖEnergiesparverband, 2017). It is estimated that 75% of the existing traditional street lamps in different European cities are in use for more than 25 years, and around 90 millions of them need to be replaced, which will bring great potential in energy conservation (Ding et al., 2020). As a result, public lighting is prioritised in a series of projects initiated by various actors, including local and regional authorities.

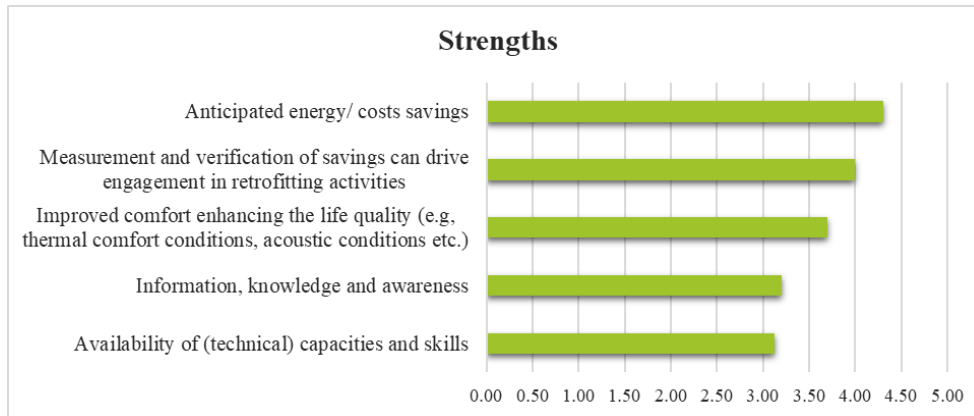
To enhance efforts the EU has launched diverse supporting policies putting in this way energy-savings in public lighting at the heart of its overall strategy towards sustainable cities (Ding et al., 2020). Furthermore, it offers multiple instruments for substantial funding and technical assistance to energy-efficient lighting retrofit projects (Novikova et al., 2017). Nevertheless, embarking on such projects can be daunting and confusing due to a number of barriers typically linked to technical, regulatory and financial factors.

In our survey, we received 10 responses in the public lighting thematic area, where 70% of the respondents contributed having a specific past (50%) or ongoing (20%) project in mind, and 30% answered based on their prior professional experience in this particular thematic area.



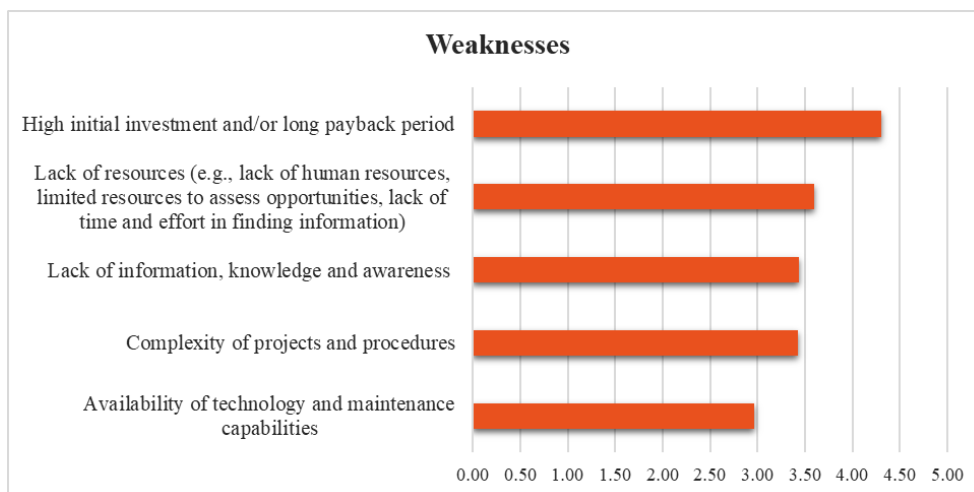
**Figure 27.** a) responses per thematic area, b) answers to the public lighting thematic area based on project-specific experience

In public lighting, again the anticipated energy and cost savings are perceived as the most significant strength towards the implementation of relevant measures. Noticeably, the same top five factors as in public and private buildings emerge in the graph below (**Figure 28**), however in this thematic area measurement and verification of savings gained increased attention ranking as the second most important factor.



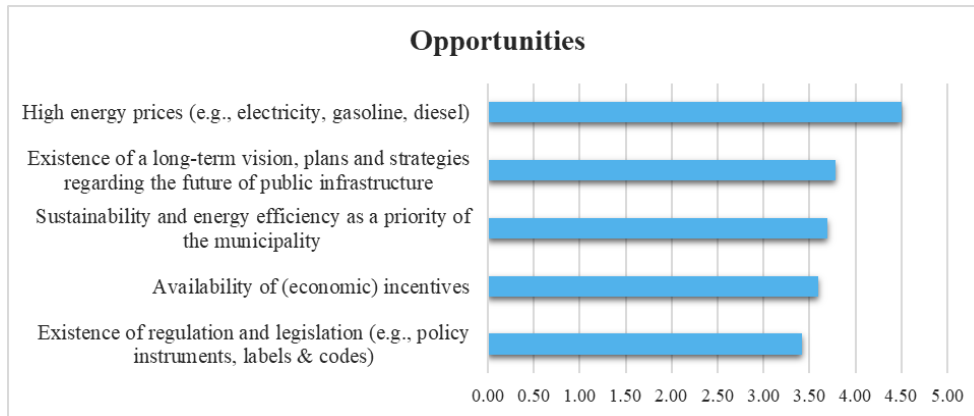
**Figure 28.** Top five strengths based on significance value in the public lighting thematic area

When it comes to weaknesses in public lighting, the high initial investment and long payback period of the projects is perceived by the local authorities’ representatives as the most significant factor that can block implementation. A consistency in ranking this factor, the lack of resources and the complexity of the project and procedures among the top five most significant weaknesses is noticed also in this thematic area (**Figure 29**). It is worth noticing that technology availability and maintenance capacities is among the factors that can hinder public lighting measures from moving forward and has not appeared among the top 5 weaknesses in any other thematic area.



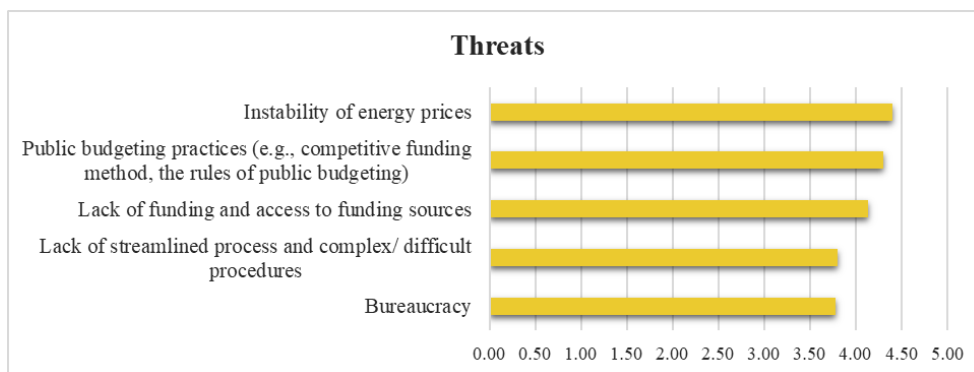
**Figure 29.** Top five weaknesses based on significance value in the public lighting thematic area

In public lighting participants have evaluated the high energy prices, the existence of a long term vision, plan and/or strategy for public infrastructure, the municipality placing sustainability among its top priorities, the availability of (economic) incentives and the existence of facilitating regulation and legislation as the five, out of nine, most significant external factors that can drive implementation (**Figure 30**). Interestingly, these are the same factors ranked as the top five in public buildings thematic area, however, the order of ranking, except for the first factor, is different.



**Figure 30.** Top five opportunities based on significance value in the public lighting thematic area

The instability of energy prices in the most recent years that can create uncertainty, especially regarding the achieved monetary savings, is placed by local authority representatives as the first threat in this thematic area, while public budget practices follow. The lack of funding and access to funding sources, the lack of streamlined processes and complex and sometimes difficult procedures and the overall bureaucracy governing the public sector are placed again at the top five positions (**Figure 31**).



**Figure 31.** Top five strengths based on significance value in the public lighting thematic area

Following, the average significant value for each of the SWOT elements is presented. As the previous two thematic areas, “strengths” have gained the highest average, followed by “opportunities”, “threats” and “weaknesses” (**Figure 32**). It is worth noticing that although the ranking is the same, threats have received an average value above three in this thematic area, while in public and private buildings, this average stayed below 2.5.

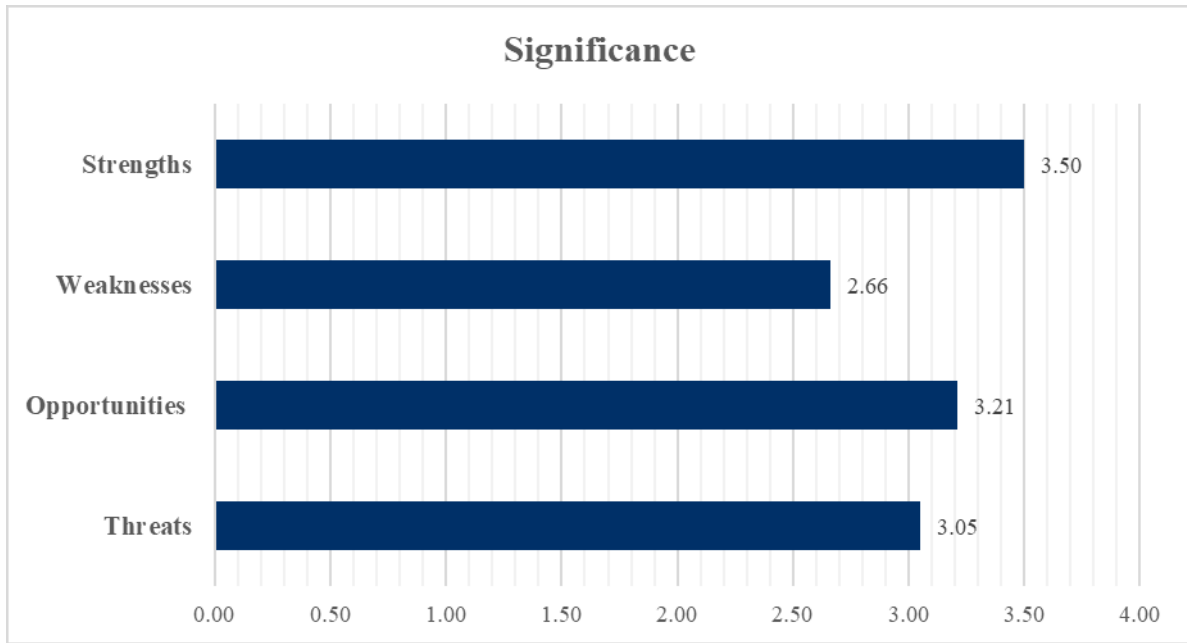


Figure 32. Significance of the SWOT categories in public lighting thematic area

Furthermore, economic and financial aspects have gained the highest average significance in strengths, with an average value noticeably going above four, the same holds for threats, with a corresponding value close to four. Knowledge and information aspects have gained the highest significance within weaknesses, while in opportunities, institutional and organisational aspects are placed first as in the previous three thematic areas discussed (Figure 33).

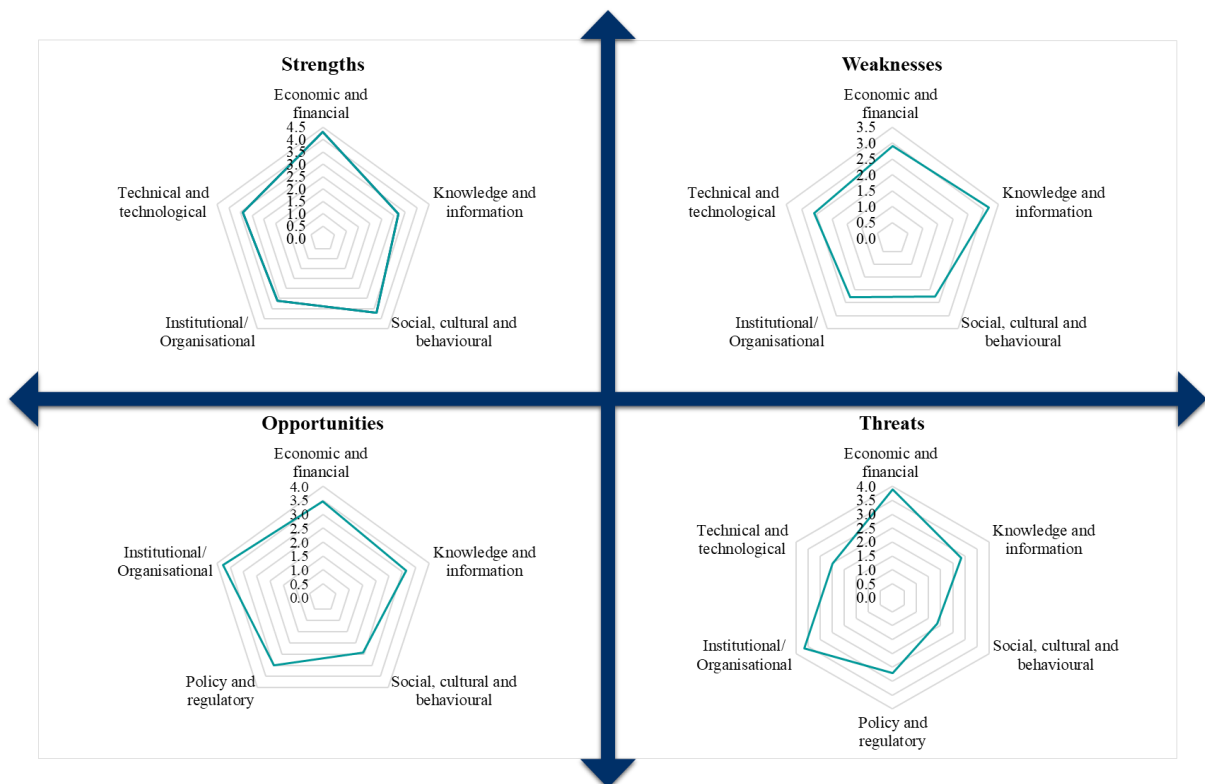


Figure 33. Graphical results of the significance of the six broad categories under SWOT elements based on findings of the online survey in the public lighting thematic area



#### 6.2.4 Transport

Transport covers the overall provision and management of mass transit systems and fleets of public authorities. Its efficient and environmentally friendly operation is vital for a sustainable and low-carbon transition, but despite the many benefits, it has long been neglected, with investments in many places prioritising private vehicle infrastructure first.

In terms of its environmental impact, the transport sector ranks among the largest energy-consuming ones, globally and in the EU, where it accounts for roughly one-third of the final energy consumption. According to the International Energy Agency<sup>13</sup>, in 2018 it produced about 29% of the total domestic economy-wide GHG emissions (21%, if international aviation and maritime emissions are excluded), whereas for the period from 1990 to 2022 related emissions grew at an annual average rate of 1.7%, faster than any other end-use sector except for industry. That said, transport, as one of the domestic emitting sectors, remains a key obstacle to meeting the EU's climate neutrality goals by 2050.

This is also a sector where innovation is not only challenging in terms of finance or the use of technology alone, but also in terms of policy incentives and priorities to reduce transport emissions without interrupting mobility (Cavallaro et al., 2018). Being better aware of the opportunities and needs unique to their setting, local governments are in the best position to create solutions for these challenges. Some good examples in that regard may include the improvement of the mass transit system's efficiency and the proliferation of vehicles powered by alternative sources, promoting the split of freight and passenger modes toward less polluting systems while making the current alternatives more appealing, the adoption of technical and regulatory constraints, such as standards and prohibitions, as well as of appropriate financial means, such as taxes, charges, and tolls (Dolge et al., 2023).

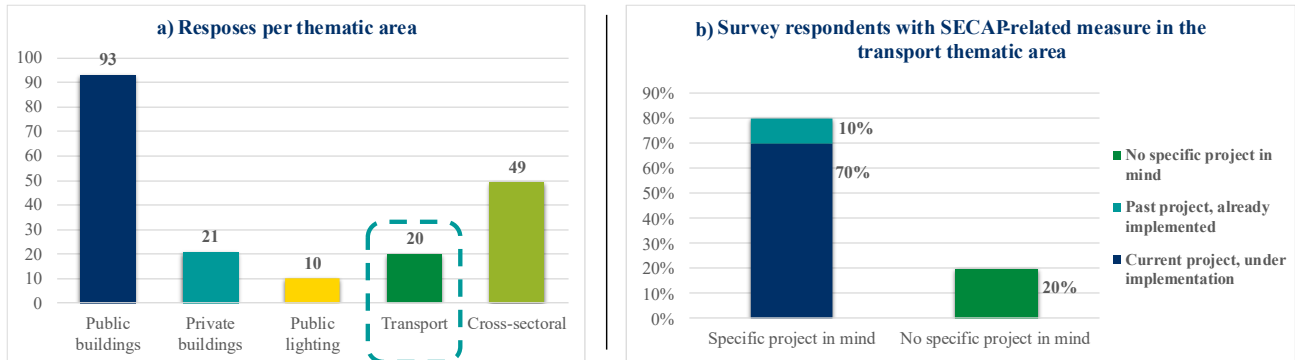
In support of such city-level actions, the EU has enacted several pieces of legislation to encourage and guide transport decarbonisation in Europe and future developments concerning the 2020–2030 decade, including specific provisions in the revised Renewable Energy Directive (RED)<sup>14</sup>.

In our survey, we received 20 responses in the transport thematic area with 80% of those coming from participants who gave their feedback based on a specific completed (10%) or in progress (70%) project and 20% based on working experience.

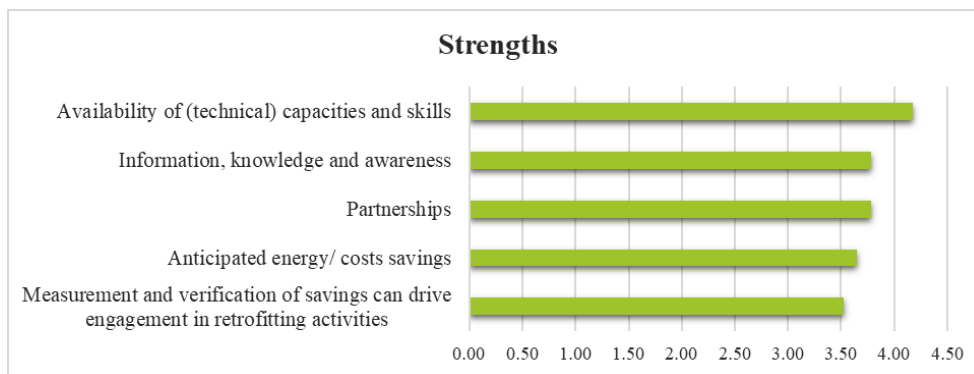
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<sup>13</sup>International Energy Agency, <https://www.iea.org/energy-system/transport#overview>

<sup>14</sup><https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023L2413&qid=1699364355105>

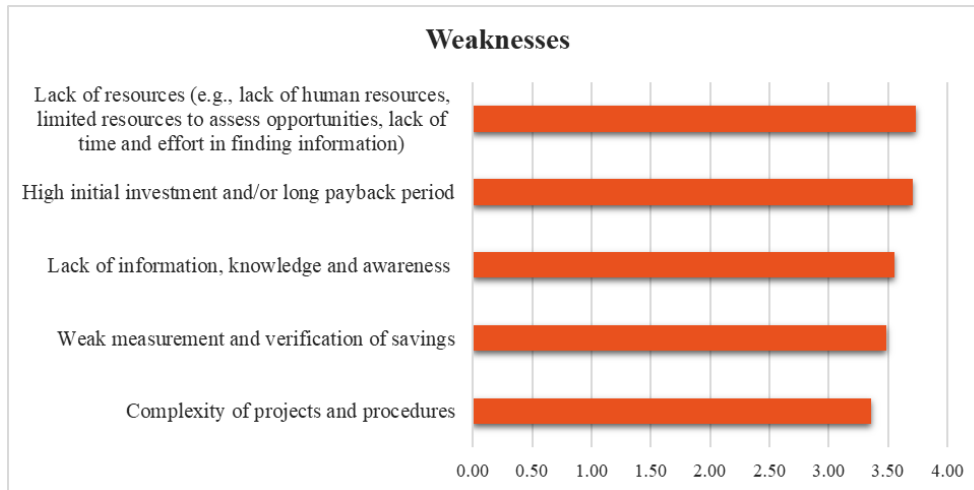


**Figure 34.** a) responses per thematic area, b) answers to the transport thematic area based on project-specific experience. In transport, survey participants flagged the availability of (technical) capacities and skills as a top strength, noticeably gaining a significance value above four. Information, knowledge and awareness play again a key role in this thematic area ranking second, while the existence of partnerships with other community organisations is ranked as the third most significant factor in this SWOT element. Anticipated energy and cost savings as well as measurement and verification processes have again received high significance values placing them in the top five strengths based on participant responses (Figure 35).



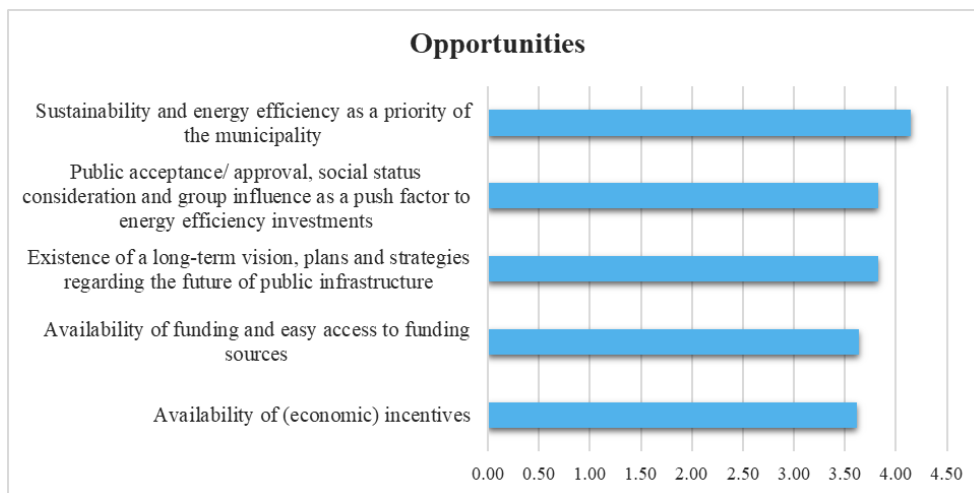
**Figure 35.** Top five strengths based on significance value in the transport thematic area

Weaknesses in implementing sustainable energy measures in transport do not differentiate a lot from what is already observed in the previously presented thematic areas. Again, economic and financial barriers, i.e., lack of resources and high initial investment and long payback period, hold the top positions in the ranking. The lack of information has ranked third in the public lighting thematic area, while the weak measurement and verification processes and the complexity of projects follow (Figure 36).



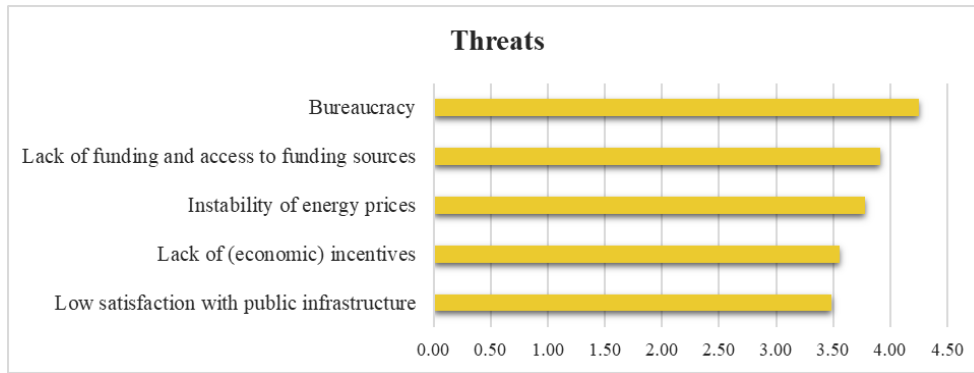
**Figure 36.** Top five weaknesses based on significance value in the transport thematic area

In transport, the most significant opportunity that drives implementation based on participants' responses is the municipality having sustainability and energy efficiency as a priority in their work programme. Public acceptance, social status and group influence play also a key role in deciding on more sustainable transport options. As in all thematic areas examined until now, the existence of long term vision, plan and/ or strategy regarding the future of public infrastructure is among the top five opportunities that can positively influence the implementation of transport measures, while economic and financial drivers, i.e., availability of funding and easy access to funding sources and availability of (economic) incentives follow (**Figure 37**).



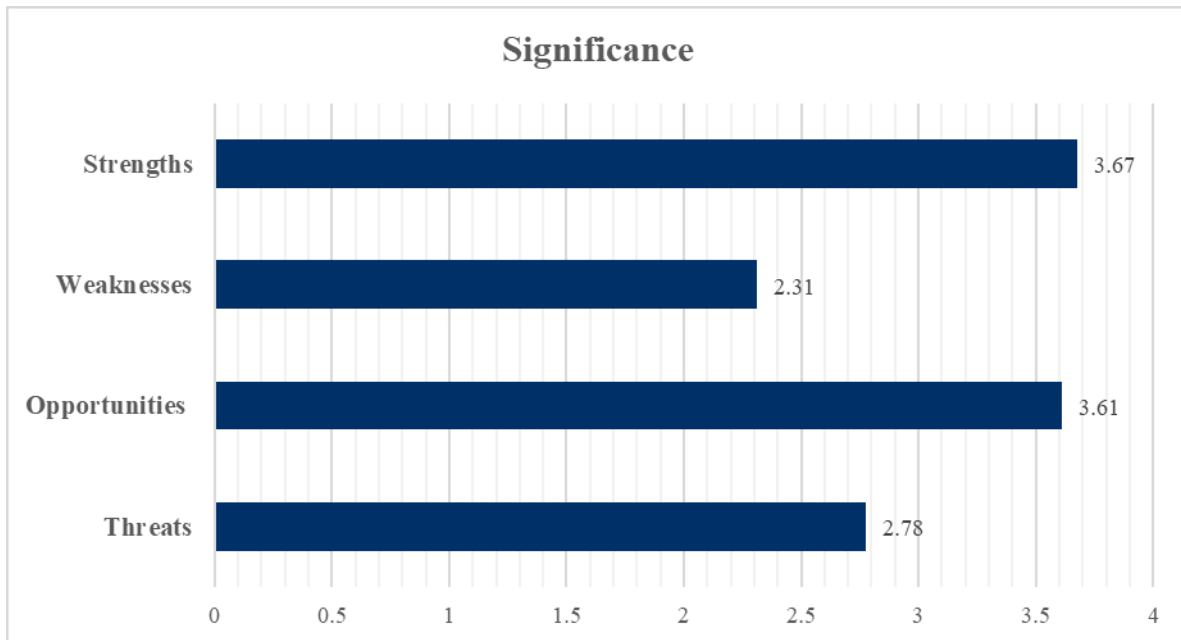
**Figure 37.** Top five opportunities based on significance value in the transport thematic area

No significant differentiation is noticed in the top five threats in the transport thematic area. Again, bureaucracy, lack of funding and access to funding sources and (economic) incentives and the instability of energy prices are placed among the most significant ones (**Figure 38**). It is worth noticing that low satisfaction with the public infrastructure is placed fifth and is among the most significant factors only in this particular thematic area.



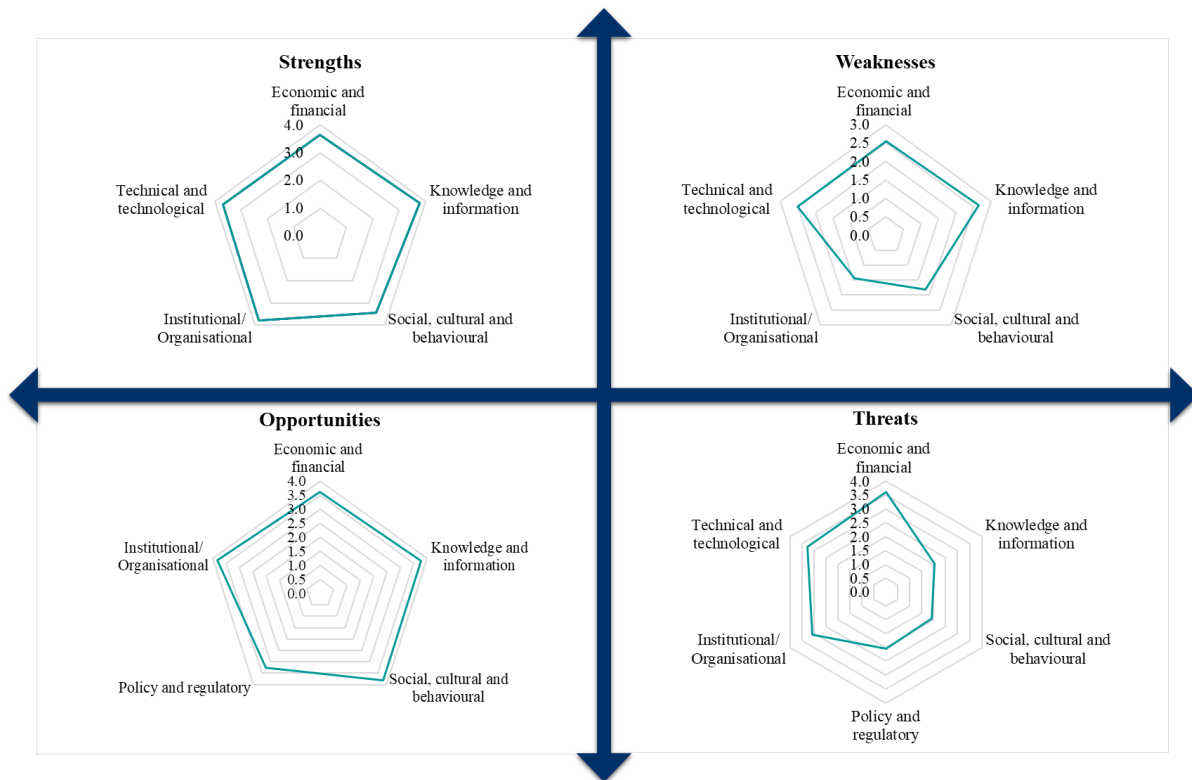
**Figure 38.** Top five threats based on significance value in the transport thematic area

Regarding, the average significant value for each of the SWOT elements, again the same ranking is observed with “strengths” having gained the highest average, followed by “opportunities”, “threats” and “weaknesses” (**Figure 39**).



**Figure 39.** Significance of the SWOT categories in transport thematic area

Furthermore, knowledge and information aspects have gained the highest average significance in strengths as well as in weaknesses. In opportunities, institutional and organisational aspects are placed first as in the previous thematic areas discussed, however, in transport they tied with social, cultural and behavioural aspects. Finally, in threats, economic and financial aspects have gained the highest average significance (**Figure 40**).



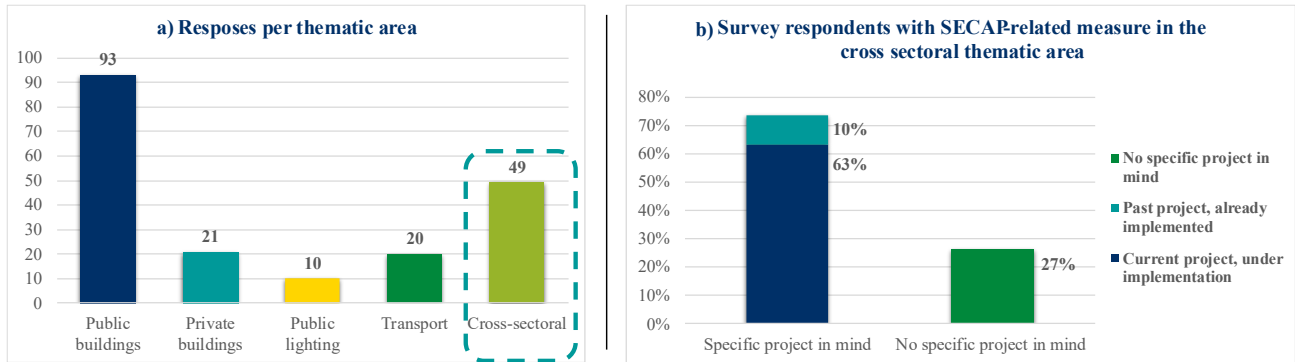
**Figure 40.** Graphical results of the significance of the six broad categories under SWOT elements based on findings of the online survey in the transport thematic area

### 6.3.5 Cross Sectoral

Cross-sectoral covers interlinked interventions that seek to enable a lasting sustainable city transformation across two or more different areas of action. These may for instance include climate change adaptation, local electricity production (e.g., wind power, hydroelectric power, photovoltaic), and local heat/cold production (e.g., combined heat and power and district heating plant).

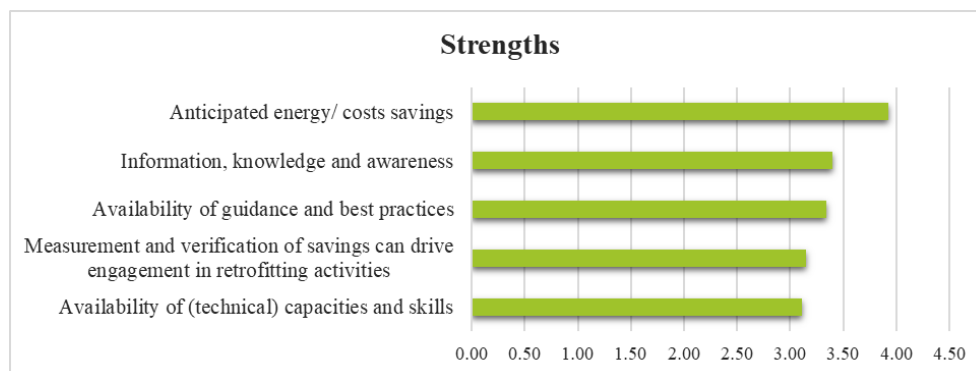
The complementarity of actions in multiple policy areas -namely, the social, economic, and environmental - in local governments' trajectories and goals necessitate overcoming "silos" structure, meaning the sectoral/policy field division of functions that characterise their operation (JRC, 2020). That said, for a cross-sectoral strategy to be successful, coordination between policy areas (horizontal), between different levels of government (vertical) and across different territorial scales and areas (territorial) is required (Portico, 2022) [https://d.docs.live.net/ceb5e1887662a7fe/Documents/TEESlab/Projects/PROSPECT^M/WP5/Task\\_5.1-SWOT/D5.2/initiative.eu/uia/integrated-development-action/cross-sectoral-approach-linking-city-strategies](https://d.docs.live.net/ceb5e1887662a7fe/Documents/TEESlab/Projects/PROSPECT^M/WP5/Task_5.1-SWOT/D5.2/initiative.eu/uia/integrated-development-action/cross-sectoral-approach-linking-city-strategies). Most of the time, this is particularly challenging for cities, mainly due to the complexity of the existing multi-level governing structure and the uncertainties surrounding the various actors, interests and interactions involved at the municipal level (Di Leo & Salvia, 2017).

In our study, the cross-sectoral thematic area received 49 responses, with most of the respondents (73%) contributing with a specific project in mind. Of these projects, 63% are still in the implementation phase and 10% are completed. Respondents without a specific project in mind, who took the survey based on their work experience make up the rest 27% of this sample.



**Figure 41.** a) responses per thematic area, b) answers to the cross-sectoral thematic area based on project-specific experience

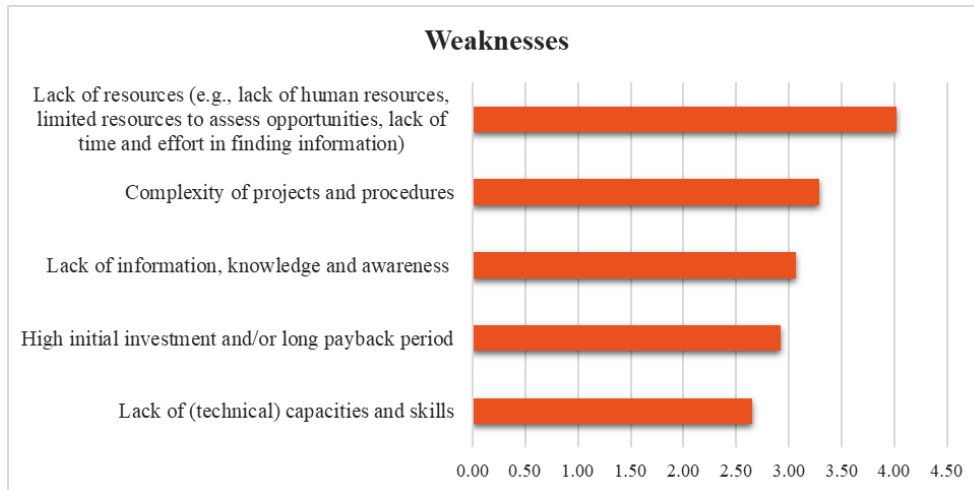
The anticipated energy and cost savings received the highest significance value and ranks as the top strength that drives the implementation of cross -sectoral measures (**Figure 42**). Thus, this is the most important strength in four out of the five thematic areas examined. It is worth highlighting that in this thematic area, the availability of guidance and best practices ranked third against all strengths, despite the fact that this factor did not emerge among within top five in the other thematic areas. Finally, participants consider again the availability of information, knowledge and awareness, measurement and verification procedures and availability of (technical) capacities and skills as significant enough to place them among the top five strengths that can positively affect delivery.



**Figure 42.** Top five strengths based on significance value in the cross-sectoral thematic area

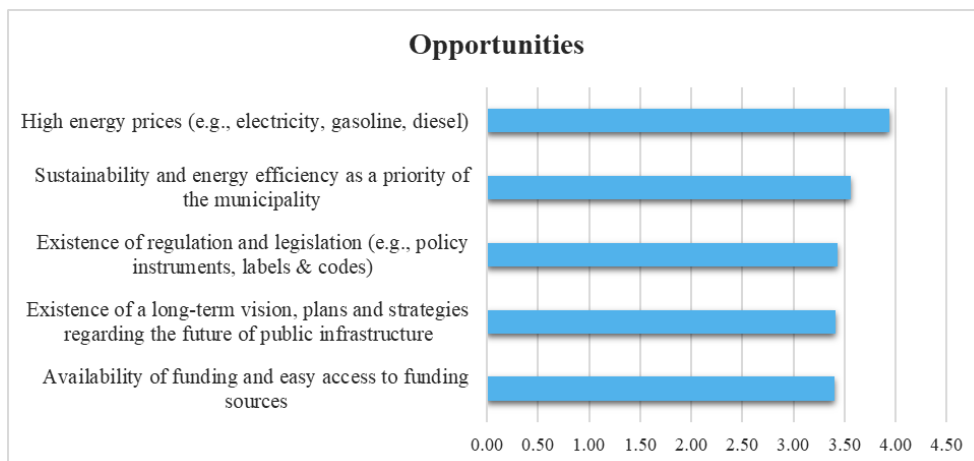
In cross-sectoral measures, the four top weaknesses are factors that we have repeatedly observed ranking in within the top five among almost all thematic areas, including the lack of resources, the complexity of projects and procedures, the lack of information, knowledge and awareness and the high initial investment and long payback period (**Figure 43**). Interestingly, a new technical and technological factor appears in the internal barriers hindering implementation in this thematic area. According to participants’ responses, the lack of (technical) capacities and skills is the fifth weakness. However, it is important to highlight that although among the top five factors, this weakness has gained a significance value of around 2.6, which is close to the value that this factor gained in other thematic areas without being in the top-ranking factors<sup>15</sup>.

<sup>15</sup> Public lighting: 2.46, ppublic buildings: 2.45, transport 2.44, private buildings 1.93



**Figure 43.** Top five weaknesses based on significance value in the cross-sectoral thematic area

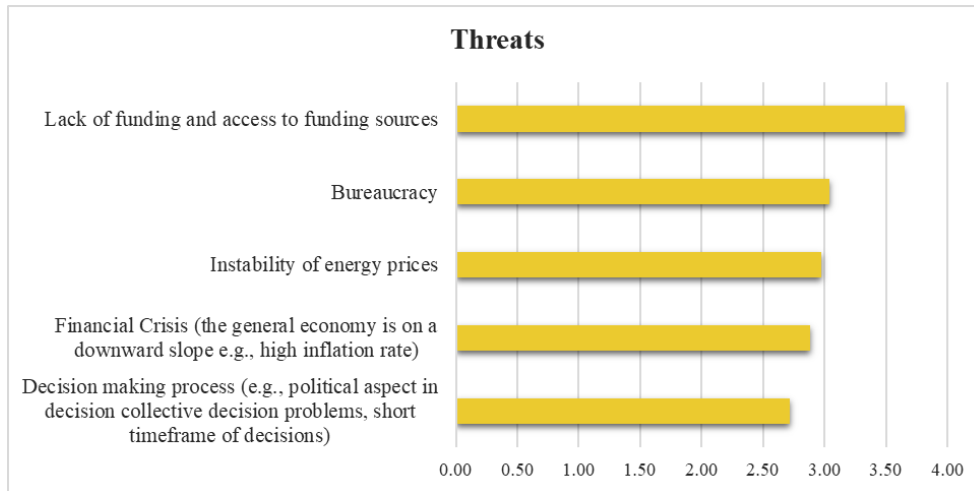
When it comes to opportunities, we do not notice any significant differentiation in this thematic area compared to what we have presented in the previous paragraphs. Again, the high energy prices is ranked by participants as the top opportunity, same as in public buildings and lighting. Having sustainability and energy efficiency as a priority of the municipality, the existence of a facilitating regulatory framework and a long-term vision, plan and strategy for public infrastructure and the availability of funding and easy access to funding sources follow (**Figure 44**). It is worth highlighting that the top five opportunities in this thematic area follow the same order as in public buildings, with the only exception being the last factor.



**Figure 44.** Top five opportunities based on significance value in the cross-sectoral thematic area

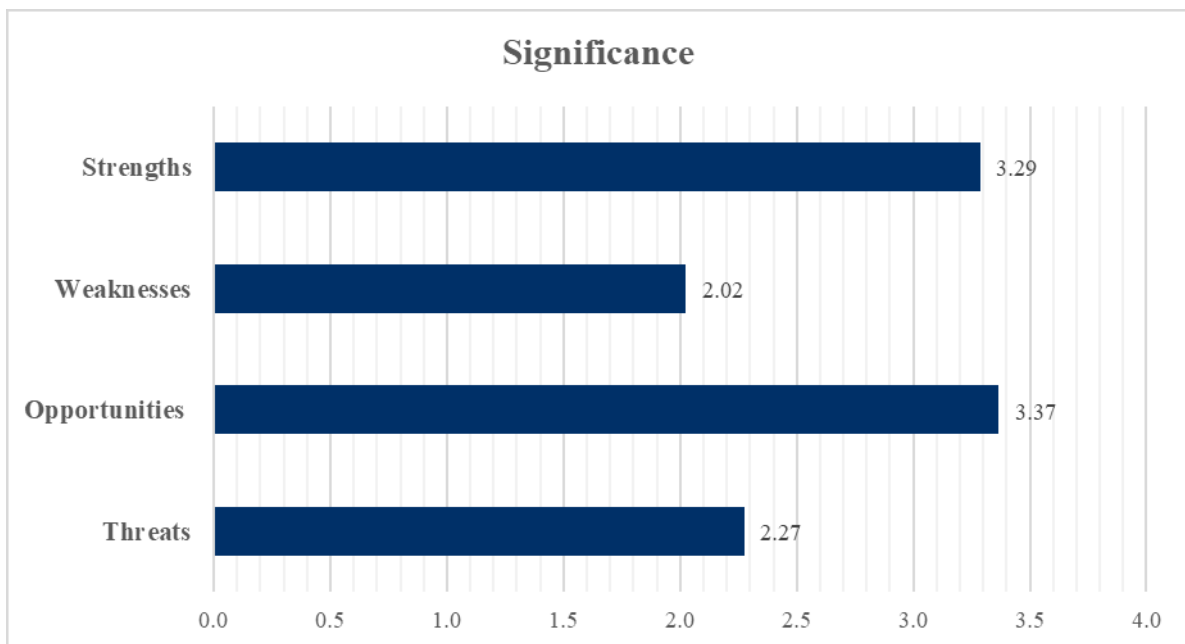
Finally, a similar pattern among the cross-sectoral thematic area and public buildings is noticed in threats too, where the top three threats are the same among the two sectors following the same order, i.e., lack of funding and access to funding sources, bureaucracy, instability of energy process. The decision-making processes, a factor that has not been previously mentioned, is among the most significant threats as presented in **Figure 45**. It is important to mention though that its significance

value of 2.7 is lower than the value that this factor gained in other thematic areas without however being in the top-ranking threats<sup>16</sup>.



**Figure 45.** Top five threats based on significance value in the cross-sectoral thematic area

Regarding, the average significant value for each of the SWOT elements in this thematic area, we notice a switch between the two positively influencing elements with “opportunities” gaining the highest average value, while “strengths” follow. Again, the negatively influencing elements, meaning, “threats” and “weaknesses” are placed in the two last positions with average values well below 2.5 (Figure 46).

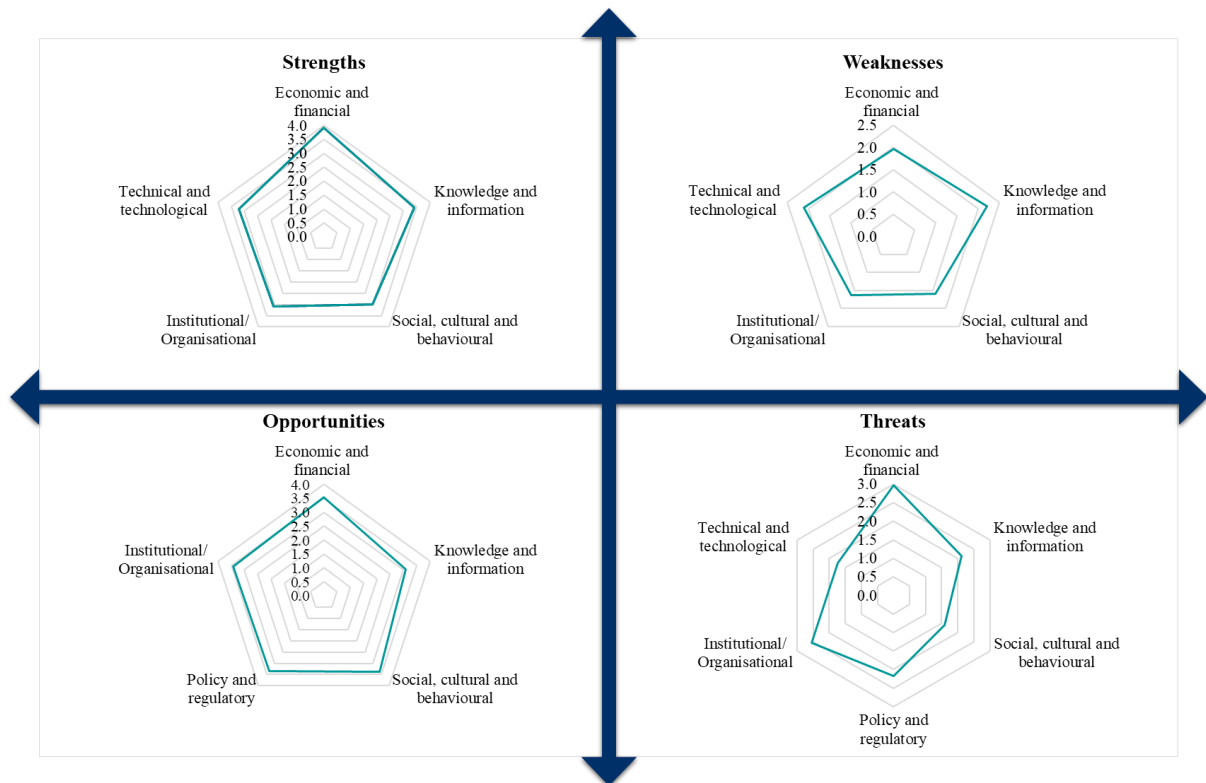


**Figure 46.** Significance of the SWOT categories in cross-sectoral thematic area

Finally, when it comes to the results for each of the six different broad categories used to cluster all factors, in this thematic area economic and financial aspects have gained the highest average significance across most SWOT elements, meaning the “strengths”, “opportunities” and “threats”.

<sup>16</sup> Public lighting: 3.28, Private buildings: 3.27, transport 3.11, public buildings: 2.97

Exception holds for the “weaknesses” where knowledge and information aspects have gained the highest average value (**Figure 47**).



**Figure 47.** Graphical results of the significance of the six broad categories under SWOT elements based on findings of the online survey in the cross-sectoral thematic area



### 6.3 Further qualitative input

As mentioned in Section 5.1, respondents were also asked to indicate if they have experienced any other barrier or driver during the planning or the implementation of sustainable energy projects, beyond those listed in the questionnaire. Even though the input may overlap with the factors presented in the previous sector or might be rather project-specific, it is presented in this report as it provides an overview of the additional concerns and motives of local and regional authorities representatives. This information can be taken into consideration by relevant stakeholders and policy actors when designing and implementing future initiatives.

When it comes to qualitative information provided by the PROSPECT+ mentors and mentees about additional main barriers (**Figure 48**), survey participants highlighted insufficient long-term planning, inconsistencies in donor financing and poor coordination between stakeholders as well as other organizational barriers between technical and financial departments as common challenges. Others noted the difficulty of integrating new technologies into outdated infrastructure, which is costly and time-consuming. Political issues, such as election cycles further complicate progress. Furthermore, a lack of up-to-date technical documentation and equipment shortages can also extend the project timelines.

Not surprisingly, participants insisted on the lack of funding acting as a key barrier. Furthermore, they emphasised the bureaucratic delays, and staff shortages, accompanied by limited experience in project financing and a lack of best practices. Overall, the combination of financial, administrative, and technical barriers is slowing down successful implementation.



**Figure 48.** Qualitative input provided on the question “Have you experienced any other barrier during the planning or the implementation of a sustainable energy project?”

When it comes to drivers (**Figure 49**), survey participants emphasized the importance of partnerships at all levels, both public and private, to enhance financial resources and expertise. Others highlighted the need to reduce legislative barriers, particularly regarding biomass use and multi-sector energy projects. Technological innovation was identified as a key enabler as it can make projects more efficient and cost-effective. Specialist involvement in project implementation, as well as mentoring programs and knowledge-sharing, were considered essential for success. Public motivation and political dedication were seen as drivers for energy transition, alongside growing climate awareness. Participants also stressed the importance of systematic planning to ensure long-term project success.

Finally, the advantage of having young, resourceful teams with strong networks and learning capabilities was also mentioned.



**Figure 49.** Qualitative input provided on the question “Are there any other drivers that positively affect the planning or the implementation of a sustainable energy project?”



## 7 Discussion and Conclusions

The purpose of this report is to explore and define the Strengths, Weaknesses, Opportunities, and Threats (SWOT) associated with the implementation of sustainable energy projects at the municipal and/or regional level across the five PROSPECT+ thematic areas: public buildings, private buildings, public lighting, transport, and cross-sectoral actions. The ultimate aim is to identify key challenges and complexities that should be taken into consideration when designing and implementing such initiatives as well as new opportunities that can be exploited to overcome barriers.

### 7.1 Findings and highlights of the SWOT Analysis

Unlike typical research solely founded on in-depth desk research on a vast scale, our study applied a participatory multi-method approach, integrating a literature review and stakeholder consultation through an online questionnaire. In particular, extensive desk research was utilised to identify the drivers and barriers to sustainable energy projects, including targeted review of the scientific literature as well as of grey literature such as technical reports and policy documents. The identified factors were then grouped into six categories -economic and financial; knowledge and informational; social, cultural, and behavioural; policy and regulatory; institutional/organisational; and technical and technological- and assigned to the four SWOT dimensions based on their nature and impact.

To validate and prioritise our findings, a questionnaire was developed and circulated among PROSPECT+ Capacity-Building Programme (CBP) participants, yielding responses from 193 interviewees across 131 cities in 27 countries. Interviewees' contributions provided valuable insights into the key factors affecting the implementation of sustainable energy projects in different urban contexts.

All things considered, several critical elements were revealed through our SWOT analysis. **On the strengths side**, the presence of information, skills, and awareness coupled with good technical capacities and capabilities were seen as significant enablers facilitating good decision-making and implementation, while anticipated energy and cost savings are validated as important motivators. **On the weaknesses side**, some of the notable ones are the high initial investments of the projects, the high complexity of procedures required accompanied by the lack of relevant resources. The **greatest opportunities** seen were the high energy prices, the existence of relevant regulations as well as long-term vision of the municipality for a sustainable future. This is countered by **significant threats**, such as limited financial resources and high bureaucratic complexity, both of which pose significant barriers to project implementation and slow the pace of energy transitions.

Furthermore, the SWOT analysis also revealed some sectoral similarities as well as variations in the five PROSPECT+ thematic areas. For the **public buildings sector**, the main obstacles were cited as high initial costs, lack of resources and complicated procedures, with the existence of technical and non-technical know-how and anticipated savings being seen as strengths. In the **private buildings sector**, budget constraints and other financial risks as well as resistance to change were recognized as the main problems, while the derived savings and the increased comfort were identified as a compelling incentive. In **public lighting**, robust monitoring and verification mechanisms were also identified as a clear asset, while high initial investments were envisioned as the main hindrances. In the **transport**



**sector**, obstacles involved upfront investment costs and a lack of financing means, whereas the availability of technical capacities was viewed as a supportive driver. Lastly, **cross-sectoral action** was blocked by lack of resources and bureaucratic processes, however, anticipated savings and reinforcement of available information were seen as strengths that could facilitate more integrated and scalable energy solutions.

Overall, the SWOT analysis highlighted that "**Strengths**", were perceived as the most significant factor in the implementation of sustainable energy projects, showing that existing capabilities and resources continue to play a positive role in the efforts. This was followed by "**Opportunities**", indicating a strong focus on the future potential and enabling conditions for progress. The "**Threats**" and "**Weaknesses**" categories scored lower, however, there are key issues that have the potential to jeopardize the success of a project if not controlled. It is not surprising that the availability of funds was scored as the most central enabler, considering the key role played by sufficient and readily available funding in stimulating energy-related projects. Meanwhile, technical capabilities -skilled personnel and technological know-how- were perceived as being vital to planning, implementation, and long-term viability.

## 7.2 Policy implications

The results featured in this report represent a general examination of the determinants of putting sustainable energy projects into practice at the local level. Based on the extensive literature review and reflection on the experiences obtained through engagement with stakeholders, various policy implications that require a coordinated and concerted effort by policymakers across all levels of government are identified.

One of the major conclusions of the analysis is the need to strengthen local institutional capacity. The majority of municipalities have internal constraints such as insufficient skilled personnel, low technical capabilities, and a lack of time and resources to manage intricate energy projects. To tackle this challenge successfully, there is a need to institute targeted investment in training for municipal staff, set up specialised energy units in the local government administrations, and develop easily accessible resources and guidelines tailored to the unique conditions of small and medium-sized local governments. Institutional capacity building is vital not only for project development but also for facilitating engagement with external actors and financing options.

Another priority area for policy action concerns facilitating access to funding. While the SWOT analysis recognised the availability of such funding as the key opportunity, there remain difficulties in dealing with complicated application processes and aligning funding opportunities with project requirements. To fully realise this potential, it is important that public authorities rationalise and improve access to current funding programs at the national and European Union levels. At the same time, diversification of the sources of funding is required. The local governments would be served by additional use of innovative instruments, for example, green bonds, energy performance contracts, revolving funds, and citizen financing initiatives. Such instruments can contribute to decreasing dependence on subsidies while enabling projects to become more economically sustainable. For small municipalities especially, aggregation of resources and inter-municipal cooperation development can enable easier access to finance and project scalability.

The policy and regulatory environment plays a major role in facilitating or hindering local energy projects. A major issue brought out in the analysis was the unpredictability linked to policies and the complexity and bureaucracy of existing processes. Therefore, policymakers need to aim at creating a more stable, consistent, and supportive regulatory environment. This includes bringing national and regional policy in line with local planning needs, putting energy efficiency requirements into local building codes and procurement policies, and allowing greater flexibility for municipalities to adapt regulations to their particular circumstances. Augmenting enforcement capabilities and reducing bureaucratic barriers which were too often placed as the top threat for such projects would further enhance local action.

There is a persistent theme throughout the report that emphasises the need for better knowledge transfer and awareness. It is also clear that more work remains to be done in conveying best practices, dispersing lessons learned, and improving public understanding of sustainable energy alternatives. Enabling peer-to-peer learning initiatives, building sets of successful case studies, and encouraging collaboration between cities, universities, and private sector partners can build a more engaged and knowledgeable community of practice. At the same time, public campaigns can assist in changing attitudes, increasing energy literacy, and building local support for ambitious energy initiatives.

In sum, the effective execution of sustainable energy initiatives relies not just on technical solutions or economic instruments. It needs an effective institutional framework, a conducive regulatory environment, knowledgeable stakeholders, and a willingness for long-term collaboration and learning. By adhering to these policy guidelines, local governments are in a better position to react to the challenges accompanying the energy transition and harness the opportunities arising from sustainable energy solutions.

### 7.3 Limitations

As mentioned, the analysis of this report focuses on the five thematic areas structured in the PROSPECT+ project, at EU level and beyond. Although the study gives a broad overview of the factors that can influence both positively and negatively the implementation of sustainable energy projects in local and regional authorities, it comes with some limitations that need to be taken into consideration. First, the representativeness of the sample should be considered consciously as it might be skewed towards those authorities that are engaged in sustainable energy initiatives, considering both their responses on the initial part of the survey in questions such as, *“Has your city adopted/developed a Sustainable Energy & Action Plan (SECAP) or equivalent plan?”*, *“Has the municipality implemented any energy efficiency/sustainable energy measures in the last 5 years?”* and *“Does the municipality plan to conduct at least one energy efficiency/sustainable energy measure in the following 2 years?”*, but also the fact that the participants are mentors and mentees of the PROSPECT+ CBP programme, which ensures at least a basic interest in such initiatives. Considering that the respondents of the survey are municipalities with a strong interest in sustainable energy projects there is potentially an overestimation of the perceived drivers and underrepresentation of the barriers and challenges that less engaged municipalities might face. Furthermore, there is an imbalance in the responses received per thematic area, with the sample size particularly for the public lighting thematic area being quite small. Thus, the quantitative aspects of the SWOT analysis, should be considered with care bearing in



mind this limitation. Finally, further research could expand the scope to country-specific analysis to deep dive into country-specific context and investigate variation in the perception of strengths, weaknesses, opportunities and threats and differences in contextual factors.



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## Appendix I

The questionnaire used to derive participants' feedback.

### English version

## PROSPECT+ Survey on barriers and drivers in sustainable energy projects

### Welcome and Introduction

Dear participant,

This survey is being conducted as part of the project “PROSPECT+ - Capacity building for cities and regions - from learning to action!” funded by the European Union’s Horizon 2020 research and innovation programme under grant agreement No. 101023271. The PROSPECT+ project aims to increase the capacity building in regional and local authorities concerning financing, implementation, proper monitoring and verification of effective, efficient and sustainable energy plans. You can visit the website of the project for further information: <https://h2020prospect.eu/>

In this survey, we aim to identify the factors affecting the implementation of sustainable energy projects by taking input from representatives of local and regional authorities or their energy/climate agencies.

The results of the survey will contribute to identifying challenges and opportunities that can be exploited to successfully implement sustainable energy projects and will refer to a number of important considerations for decision-makers and policymakers, useful when initiating and evaluating local sustainable energy activities.

Filling out this survey takes about 15 minutes.

Thank you in advance for your participation!

Contact for further information: Danai Sofia Exintaveloni ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\* I voluntarily agree to participate in this research and I confirm that I read and accept the [Privacy Policy](#). [single choice, mandatory]

- I agree
- I disagree

### A. Personal background

**A1. Name of your organisation:** [open field, optional] \_\_\_\_\_

**A2. Type of Organisation:** [single choice, mandatory]

- municipality
- energy agency
- other

**A3. If other specify:** [open field, mandatory] \_\_\_\_\_

**A4. Region:** [open field, mandatory] \_\_\_\_\_

**A5. Country:** [open field, mandatory] \_\_\_\_\_

**A6. Are you a PROSPECT+ participant?** [single choice, mandatory]

- Yes, I am a mentor
- Yes, I am a mentee



- No, I am not a PROSPECT+ participant

**A7. If you answered “Yes” in the previous question indicate your group name:** [open field, mandatory] \_\_\_\_\_

**A8. Were you a PROSPECT participant?** [single choice, optional]

- Yes, I was a mentor
- Yes, I was a mentee
- No, I was not PROSPECT participant

**A9. What is your working experience in energy efficiency and energy-related issues (years working in the field)?** [single choice, mandatory]

- Less than 3 years
- 3 to 5 years
- 6 to 10 years
- More than 10 years

**A10. Which option describes your gender identity?** [single choice, mandatory]

- Male
- Female
- Other
- Prefer not to answer

**A10. Do you have experience working in sustainable energy projects?** [single choice, mandatory]

- Yes
- No

## **B. Thematic area and Background of the organisation**

**B1. How many inhabitants does your municipality have?** [single choice, mandatory]

- <5.000 (very small sized town)
- 5.000-50.000 (small and medium sized town)
- 50.000-100.000 (small urban centre)
- 100.000-250.000 (medium urban centre)
- 250.000-1.000.000 (large urban centre or region)
- >1.000.000 (metropolitan area)

**B2. Has your city adopted/developed a Sustainable Energy & Action Plan (SECAP) or equivalent plan?** [single choice, mandatory]

- Yes
- No
- Other (please explain below)

**B3. If you answered "Other" in the previous question please explain:** [open field, mandatory]

\_\_\_\_\_

In PROSPECT+ we are using the following categorization of sustainable energy projects in five thematic areas:



The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

**B4. For which thematic area are would you like to fill in the questionnaire?** [single choice, mandatory]

- Public buildings
- Private buildings
- Public lighting
- Transport
- Cross-sectoral

**B5. Has the municipality implemented any energy efficiency/sustainable energy measures in the thematic area that you indicated in the previous question in the last 5 years?** [single choice, mandatory]

- Yes
- No
- The implementation has started, but is not yet completed.

**B6. Has the municipality implemented energy efficiency/sustainable energy measures in any of the other thematic areas in the last 5 years?** [single choice, mandatory]

- Yes
- No
- The implementation has started, but is not yet completed.

**B7. If yes, please state in which ones:** [multiple choice, mandatory]

- Public buildings
- Private buildings
- Public lighting
- Transport
- Cross-sectoral

**B8. Does the municipality plan to conduct at least one energy efficiency/sustainable energy measure in the thematic area for which you are filling in the questionnaire in the following 2 years?** [single choice, mandatory]

- Yes



- No

**B9. Does the municipality plan to conduct at least one energy efficiency/sustainable energy measure in any of the other thematic areas in the following 2 years?** [single choice, mandatory]

- Yes
- No

**B10. Is there a decision-making method in place?** [single choice, mandatory]

- Yes
- No

**B11. If yes, which one? Please describe:** [open field, mandatory]

---

**B12. If no, please describe the process how decisions are being made on the order in which projects from sustainable plans will be implemented:** [open field, mandatory]

---

The following questions focus on the different barriers and drivers that can be identified in sustainable energy projects in cities and municipalities.

Prior to this questionnaire, we conducted a comprehensive literature review on the different factors that can positively or negatively affect the implementation of sustainable energy projects with a focus on the five thematic areas of [H2020 PROSPECT+](#) project.

Taking your input into account we aim to conduct a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis in which we will categorise the different factors identified with respect to their internal or external characteristics, and we will assess their importance.

You are kindly asked to answer whether the different factors are present as a barrier/driver in your context, using a binary answer (yes or no), and the degree of the importance of the barrier/driver according to your perception and experience, using a 5-point Likert scale (1 = not important at all, 5 = extremely important). This second measure aims at identifying the most important positive and negative factors affecting the implementation of sustainable energy projects, and it will thus provide a number of important considerations for decision makers useful when initiating or evaluating local sustainable energy activities.

**B13. Are you answering this questionnaire having a specific project in mind in the thematic area that you choose above?** [single choice, mandatory]

- Yes, I am answering the questionnaire for a project that has been implemented in the past.
- Yes, I am answering the questionnaire based on a project/proposal that is currently under development
- No, I am answering the questionnaire based on my experience in this thematic area without having a specific project in mind.

### C. Barriers in sustainable energy projects

Please (i) indicate whether the following factors **exist** as barriers hindering the implementation of sustainable energy projects in your context and (ii) evaluate their **importance** concerning the degree to which they can affect the implementation of sustainable energy projects **based on your experience** (regardless whether this barrier appeared in your project or not).

To rate the importance of each barrier, please use the following rating:



- 1 = not at all important, it does not constrain the improvement of the project.
- 2= less than quite important
- 3 = quite important, it delays or limits the improvement of the project
- 4 = more than quite important
- 5= very important, it is critical in preventing the implementation of the project

<b>Economic and financial barriers</b>	<b>Existence</b>	<b>Importance</b>				
C1. Lack of funding and access to funding sources	Yes/No	1	2	3	4	5
C2. Lack of resources (e.g., lack of human resources, limited resources to assess opportunities, lack of time and effort in finding information)	Yes/No	1	2	3	4	5
C3. High initial investment and/or long payback period	Yes/No	1	2	3	4	5
C4. Lack of (economic) incentives	Yes/No	1	2	3	4	5
C5. Split incentives and principal - agent problem (The principal-agent problem occurs when one person or entity (the "agent") is able to make decisions and/or take actions on behalf of, or that impact, another person or entity (the "principal"). This dilemma exists in circumstances where agents are motivated to act in their own best interests, which are contrary to those of their principals.)	Yes/No	1	2	3	4	5
C6. The project does not occur profit	Yes/No	1	2	3	4	5
C7. Low anticipated energy/cost savings	Yes/No	1	2	3	4	5
C8. Other Costs (e.g., hidden and transaction costs)	Yes/No	1	2	3	4	5
C9. Interference in daily work (i.e., disruption in the ordinary life and anticipated hassle factor)	Yes/No	1	2	3	4	5
C10. Financial Crisis (the general economy is on a downward slope e.g., high inflation rate)	Yes/No	1	2	3	4	5
C11. Instability of energy prices	Yes/No	1	2	3	4	5
C12. Unfavourable economic/ financial status of the project implementer	Yes/No	1	2	3	4	5
C13. Risks & uncertainty related to economic aspects of the projects (e.g., uncertainty about the savings, rebound effects, etc.)	Yes/No	1	2	3	4	5

<b>Knowledge and Information barriers</b>	<b>Existence</b>	<b>Importance</b>				
C14. Lack of information, knowledge and awareness	Yes/No	1	2	3	4	5
C15. Low priority activity	Yes/No	1	2	3	4	5
C16. Mistrust (i.e., lack of trust in energy audits and measures based on them, mistrust of information, lack of trust in ESCOs, mistrust of new technologies)	Yes/No	1	2	3	4	5
C17. Lack of efficient dissemination and promotion	Yes/No	1	2	3	4	5

<b>Social, cultural and behavioural barriers</b>	<b>Existence</b>	<b>Importance</b>				
C18. Resistance to change, inertia and/or lack of interest	Yes/No	1	2	3	4	5
C19. Lack of public acceptance, social status consideration, social norms and group influence as a barrier	Yes/No	1	2	3	4	5
C20. Bounded rationality (Bounded rationality is the idea that rationality is limited when individuals make decisions. Limitations include the difficulty of the problem requiring a decision, the cognitive capability of the mind, and the time available to make the decision. Decision-makers, in this view, act as satisficers, seeking a satisfactory solution, with everything that he/she have at the moment rather than an optimal solution.)	Yes/No	1	2	3	4	5
C21. Unwillingness (to finance energy efficiency, to incur dept)	Yes/No	1	2	3	4	5
C22. Waiting for more mature products	Yes/No	1	2	3	4	5



C23. Reluctance, lack of confidence in technology and/or negative past experience	Yes/No	1	2	3	4	5
<b>Policy and regulatory barriers</b>						
C24. Lack of regulation and legislation and/or conflicting policy	Yes/No	1	2	3	4	5
C25. Frequent changes in legislation and/ or regulatory framework	Yes/No	1	2	3	4	5
C26. Lack of mandatory requirements and enforcement	Yes/No	1	2	3	4	5
C27. Risks & uncertainty related to policy aspects that can influence the project	Yes/No	1	2	3	4	5
<b>Institutional/ Organisational barriers</b>						
C28. Institutional practice (i.e., issues related to institutional framework)	Yes/No	1	2	3	4	5
C29. Lack of streamlined process and complex/ difficult procedures	Yes/No	1	2	3	4	5
C30. Bureaucracy	Yes/No	1	2	3	4	5
C31. Lack of a long-term vision, plans and strategies regarding the future of public infrastructure	Yes/No	1	2	3	4	5
C32. Public budgeting practices (e.g., competitive funding method, the rules of public budgeting)	Yes/No	1	2	3	4	5
C33. Lack of management and government support	Yes/No	1	2	3	4	5
C34. Decision making process (e.g., political aspect in decision collective decision problems, short timeframe of decisions)	Yes/No	1	2	3	4	5
C35. Lack of power for initiating clean energy and energy efficiency actions	Yes/No	1	2	3	4	5
C36. Contractual lock-in (i.e., existing partnership/contracts with suppliers)	Yes/No	1	2	3	4	5
<b>Technical and technological barriers</b>						
C37. Lack of (technical) capacities and skills	Yes/No	1	2	3	4	5
C38. Lack of guidance and best practices	Yes/No	1	2	3	4	5
C39. Complexity of projects and procedures	Yes/No	1	2	3	4	5
C40. Inefficient infrastructure (e.g., lack of cycling/walking infrastructure, lack of rail transportation/infrastructure, lack of infrastructure for recharging of electric vehicles)	Yes/No	1	2	3	4	5
C41. Joint ownership	Yes/No	1	2	3	4	5
C42. Availability of technology and maintenance capabilities	Yes/No	1	2	3	4	5
C43. Low satisfaction with public infrastructure	Yes/No	1	2	3	4	5
C44. Lack of data	Yes/No	1	2	3	4	5
C45. Technical problems and limitations (including geographical and logistical issues)	Yes/No	1	2	3	4	5
C46. Weak measurement and verification of savings	Yes/No	1	2	3	4	5
C47. Risks & uncertainty related to technical and technological aspects of the project	Yes/No	1	2	3	4	5

**C48. Have you experienced any other barrier during the planning or the implementation of a sustainable energy project that wasn't previously mentioned? If yes, please provide your input. You may also indicate the importance of the barrier in parenthesis.**

e.g., lack of funding (4)

### D. Drivers in sustainable energy projects

Please (i) indicate whether the following factors **exist** as drivers facilitating the implementation of sustainable energy projects in your context and (ii) evaluate their **importance** concerning the degree to which they can affect the implementation of sustainable energy projects **based on your experience** (regardless whether this driver appeared in your project or not).

To rate the importance of each driver, please use the following rating:

- 1 =not at all important, it does not facilitate the improvement of the project.
- 2= less than quite important
- 3 = quite important, it facilitates the improvement of the project to an extent
- 4 = more than quite important
- 5= very important, it fosters the implementation of the project

<b>Economic and financial drivers</b>	<b>Existence</b>	<b>Importance</b>				
D1. Availability of funding and easy access to funding sources	Yes/No	1	2	3	4	5
D2. Availability of (economic) incentives	Yes/No	1	2	3	4	5
D3. Anticipated energy/ costs savings	Yes/No	1	2	3	4	5
D4. Increased property value	Yes/No	1	2	3	4	5
D5. High energy prices (e.g., electricity, gasoline, diesel)	Yes/No	1	2	3	4	5

<b>Knowledge and Information drivers</b>	<b>Existence</b>	<b>Importance</b>				
D6. Information, knowledge and awareness	Yes/No	1	2	3	4	5
D7. Sustainability and energy efficiency as a priority of the municipality	Yes/No	1	2	3	4	5
D8. Dissemination and promotion campaigns	Yes/No	1	2	3	4	5

<b>Social, cultural and behavioural drivers</b>	<b>Existence</b>	<b>Importance</b>				
D9. Public acceptance/ approval, social status consideration and group influence as a push factor to energy efficiency investments	Yes/No	1	2	3	4	5
D10. Improved comfort enhancing the life quality (e.g, thermal comfort conditions, acoustic conditions etc.)	Yes/No	1	2	3	4	5

<b>Policy and regulatory drivers</b>	<b>Existence</b>	<b>Importance</b>				
D11. Existence of regulation and legislation (e.g., policy instruments, labels & codes)	Yes/No	1	2	3	4	5
D12. Existence of mandatory requirements and effective enforcement	Yes/No	1	2	3	4	5

<b>Institutional/ Organisational drivers</b>	<b>Existence</b>	<b>Importance</b>				
D13. Existence of a long-term vision, plans and strategies regarding the future of public infrastructure	Yes/No	1	2	3	4	5
D14. Partnerships (Partnership with other community organisations such as utilities, NGOs and conservation authorities among others.)	Yes/No	1	2	3	4	5

<b>Technical and technological drivers</b>	<b>Existence</b>	<b>Importance</b>				
D15. Availability of (technical) capacities and skills	Yes/No	1	2	3	4	5



D16. Availability of guidance and best practices	Yes/No	1	2	3	4	5
D17. Measurement and verification of savings can drive engagement in retrofitting activities	Yes/No	1	2	3	4	5

**D18. Are there any other drivers that positively affect the planning or the implementation of a sustainable energy project that weren't previously mentioned? If yes, please provide your input. You may also indicate the importance of the driver in parenthesis.**

e.g., existence of economic incentives (4) \_\_\_\_\_

### E. Other

**E1. Would you like to receive feedback based on your answers?** [single choice, mandatory]

- Yes
- No

**E2. If you answered "Yes" in the previous question, please provide the name of your facilitator:**  
[open field, mandatory] \_\_\_\_\_

**E3. Please provide your email where you would like to receive the feedback:** [open field, mandatory] \_\_\_\_\_

**E4. We would like to inform you about our results once we completed analyzing the survey data. If you agree to hearing from us again for this purpose, please enter your contact email address below. Your personal data will not be linked to the questionnaire.** [open field, optional]

Thank you for contributing to the survey! If you have general questions or comments concerning the survey or our projects, feel free to contact us.

## Italian version

### PROSPECT+ Indagine sugli ostacoli e i fattori trainanti dei progetti nel settore dell'energia sostenibile

#### Benvenuto e Introduzione

Gentile partecipante,

Il sondaggio é condotto nell'ambito del progetto "PROSPECT+ - Capacity building for cities and regions — from learning to action!" finanziato dal programma di ricerca e innovazione Orizzonte 2020 dell'Unione europea nell'ambito della convenzione di sovvenzione n. 101023271. Il progetto PROSPECT + mira ad aumentare lo sviluppo delle capacità degli enti regionali e locali per quanto riguarda il finanziamento, l'attuazione, il monitoraggio e la verifica di piani energetici efficaci, efficienti e sostenibili. Per ulteriori informazioni è possibile visitare il sito del progetto: <https://h2020prospect.eu/>

In questo sondaggio intendiamo individuare i fattori che incidono sull'attuazione dei progetti in materia di energia sostenibile, attingendo al contributo dei rappresentanti degli enti locali e regionali o delle loro agenzie per l'energia e il clima.

I risultati dell'indagine contribuiranno a individuare le sfide e le opportunità che possono essere sfruttate per attuare con successo progetti in materia di energia sostenibile e faranno riferimento a una



serie di importanti considerazioni per i responsabili politici, utili per avviare e valutare le attività locali nel settore dell'energia sostenibile.

Rispondere al sondaggio richiede circa 15 minuti.

Grazie per la vostra partecipazione.

Per ulteriori informazioni si prega di contattare: Danai Sofia Exintaveloni ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\* Accetto volontariamente di partecipare a questa ricerca e confermo di aver letto e accettato l'[informativa sulla privacy](#)

- Sono d'accordo
- Non sono d'accordo

### A. Background personale

**A1. Nome della Sua organizzazione:** \_\_\_\_\_

**A2. Tipo di organizzazione:**

- Comune
- Agenzia per l'energia e il clima
- Altri

**A3. Se la risposta è "Altro", specificare:** \_\_\_\_\_

**A4. Regione/Città:** \_\_\_\_\_

**A5. Paese:** \_\_\_\_\_

**A6. Sei un partecipante a PROSPECT +?**

- Sì, sono un mentore
- Sì, sono un mentee
- No, non sono un partecipante di PROSPECT+

**A7. Se la risposta alla domanda precedente è "Sì", indicare il nome del gruppo:**

\_\_\_\_\_

**A8. Sei un partecipante a PROSPECT?**

- Sì, ero un mentor
- Sì, sono stato un mentee
- No, non ho partecipato a PROSPECT

**A9. Qual è la sua esperienza lavorativa in materia di efficienza energetica e questioni connesse all'energia (anni di lavoro nel settore)?**

- Inferiore a 3 anni
- Da 3 a 5 anni
- Da 6 a 10 anni
- Più di 10 anni

**A10. Quale opzione descrive la tua identità di genere**

- Maschile
- Femminile
- Altri
- Preferisco non rispondere



### A11. Ha esperienza di lavoro in progetti nel settore dell'energia sostenibile?

- Sì
- No

## B. Area tematica e contesto dell'organizzazione

### B1. Quanti abitanti ha il Suo comune?

- <5.000 (città di dimensioni molto ridotte)
- 5.000-50.000 (città di piccole e medie dimensioni)
- 50.000-100.000 (piccolo centro urbano)
- 100.000-250.000 (centro urbano medio)
- 250.000-1.000.000 (grande centro urbano)
- >1.000.000 (area metropolitana)

### B2. Domanda La Sua città ha adottato/sviluppato un piano d'azione per l'energia sostenibile (PAES o PAESC) o un piano equivalente?

- Sì
- No
- Altro (spiegare di seguito)

### B3. Se ha risposto "Altro" alla domanda precedente, si prega di spiegare:

In PROSPECT + utilizziamo la seguente categorizzazione dei progetti in materia di energia sostenibile in cinque aree tematiche:

The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

### B4. Per quale settore tematico vorreste compilare il questionario?

- Edifici pubblici
- Edifici privati
- Illuminazione pubblica
- Trasporti
- Intersettoriale (o cross settoriale)



**B5. Domanda Negli ultimi 5 anni, il comune ha attuato misure in materia di efficienza energetica/energia sostenibile nell'area tematica indicata nella domanda precedente?**

- Sì
- No
- L'attuazione è iniziata, ma non è ancora completata.

**B6. Negli ultimi 5 anni il comune ha attuato misure in materia di efficienza energetica/energia sostenibile in una qualsiasi delle altre aree tematiche?**

- Sì
- No
- L'attuazione è iniziata, ma non è ancora completata.

**B7. In caso affermativo, indicare in quale:**

- Edifici pubblici
- Edifici privati
- Illuminazione pubblica
- Trasporti
- Intersettoriale

**B8. Il comune prevede di attuare almeno una misura di efficienza energetica/energia sostenibile nell'area tematica per la quale sta compilando il questionario nei 2 anni successivi?**

- Sì
- No

**B9. Domanda Il comune prevede di attuare almeno una misura di efficienza energetica/energia sostenibile in una qualsiasi delle altre aree tematiche nei successivi 2 anni?**

- Sì
- No

**B10. Esiste un metodo decisionale?**

- Sì
- No

**B11. Se sì, quale? Descrivere:**

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**B12. Domanda In caso di risposta negativa, descrivere in che modo vengono prese le decisioni sull'ordine di attuazione dei progetti dei piani sostenibili:**

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Le domande che seguono si concentrano sui diversi ostacoli e fattori trainanti che possono essere individuati nei progetti in materia di energia sostenibile nelle città e nei comuni.

Prima del presente questionario, abbiamo condotto un'analisi completa della letteratura sui diversi fattori che possono incidere positivamente o negativamente sull'attuazione dei progetti in materia di energia sostenibile, con particolare attenzione alle cinque aree tematiche del progetto [PROSPECT+](#) di Orizzonte 2020.

Tenendo conto del Suo contributo, intendiamo condurre un'analisi SWOT (Strengths-Weaknesses-Opportunities-Threats) in cui classificheremo i diversi fattori individuati in relazione alle loro caratteristiche interne o esterne e ne valuteremo l'importanza.



Si prega di rispondere se i diversi fattori sono presenti come barriera/fattore trainante nel Suo contesto, utilizzando una risposta binaria (sì o no) e il grado di importanza dell'ostacolo/fattore trainante in base alla Sua percezione ed esperienza, utilizzando una scala Likert di 5 punti (1 = per niente importante, 5 = estremamente importante). Questa seconda misura mira a individuare i fattori positivi e negativi più importanti che incidono sull'attuazione dei progetti nel settore dell'energia sostenibile e fornirà quindi una serie di importanti considerazioni ai responsabili delle decisioni al momento di avviare o valutare attività locali nel settore dell'energia sostenibile.

**B13. Rispondete al questionario tenendo conto di un progetto specifico nell'area tematica scelta sopra?**

- Sì, rispondo al questionario per un progetto attuato in passato.
- Sì, rispondo al questionario sulla base di un progetto/proposta attualmente in fase di elaborazione.
- No, rispondo al questionario sulla base della mia esperienza in questo settore tematico senza avere a mente un progetto specifico.

**C. Ostacoli nei progetti in materia di energia sostenibile**

Si prega di i) indicare se **esistono** i seguenti fattori che ostacolano l'attuazione di progetti nel settore dell'energia sostenibile nel vostro contesto e ii) valutarne **l'importanza** per quanto riguarda la misura in cui possono incidere sull'attuazione di progetti nel settore dell'energia sostenibile **sulla base della Sua esperienza** (indipendentemente dal fatto che tale ostacolo figurasse o meno nel progetto).

Per valutare l'importanza di ciascun ostacolo, utilizzare la seguente classificazione:

- 1 = per niente importante, non limita il miglioramento del progetto.
- 2 = meno importante
- 3 = abbastanza importante, ritarda o limita il miglioramento del progetto
- 4 = più che abbastanza importante
- 5 = molto importante, è fondamentale per prevenire l'attuazione del progetto

<b>Economic and financial barriers</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C1.</b> Mancanza di finanziamenti e accesso alle fonti di finanziamento	Sì/No	1	2	3	4	5
<b>C2.</b> Mancanza di risorse (ad esempio, mancanza di risorse umane, risorse limitate per valutare le opportunità, mancanza di tempo e di impegno nella ricerca di informazioni)	Sì/No	1	2	3	4	5
<b>C3.</b> Investimento iniziale elevato e/o lungo periodo di ammortamento	Sì/No	1	2	3	4	5
<b>C4.</b> Mancanza di incentivi (economici)	Sì/No	1	2	3	4	5
<b>C5.</b> Frammentazione degli incentivi e del preponente — problema dell'agente (Il problema dell'agente principale (o modello principale-agente) si verifica quando una persona o un'entità (l' "agente") è in grado di prendere decisioni e/o intraprendere azioni per conto di un'altra persona o entità (il "principale") o tale impatto. Tale dilemma esiste in alcune circostanze in cui gli agenti sono motivati ad agire nel loro interesse, che si differenzia dagli interessi dei loro principali.)	Sì/No	1	2	3	4	5
<b>C6.</b> Il progetto non produce profitti	Sì/No	1	2	3	4	5
<b>C7.</b> Basso risparmio energetico/dei costi previsto	Sì/No	1	2	3	4	5
<b>C8.</b> Domanda Altri costi (ad esempio costi occulti e di transazione)	Sì/No	1	2	3	4	5
<b>C9.</b> Interferenza nel lavoro quotidiano (ossia imprevisti o altri fattori)	Sì/No	1	2	3	4	5
<b>C10.</b> Crisi finanziaria (l'economia in generale è affetta da, ad esempio, un tasso di inflazione elevato, un crollo dei consumi)	Sì/No	1	2	3	4	5



<b>C11.</b> Instabilità dei prezzi dell'energia	Sì/No	1	2	3	4	5
<b>C12.</b> Situazione economica/finanziaria sfavorevole dell'esecutore del progetto	Sì/No	1	2	3	4	5
<b>C13.</b> Rischio; in relazione agli aspetti economici dei progetti (ad esempio incertezza sui risparmi, effetti di rimbalzo o altre risposte sistemiche, ecc.)	Sì/No	1	2	3	4	5

<b>Barriere alla conoscenza e all'informazione</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C14.</b> Domanda Mancanza di informazioni, conoscenze e consapevolezza	Sì/No	1	2	3	4	5
<b>C15.</b> Attività a bassa priorità	Sì/No	1	2	3	4	5
<b>C16.</b> Sfiducia (ossia mancanza di fiducia negli audit energetici e nelle misure basate su di essi, sfiducia nelle informazioni, mancanza di fiducia nei confronti delle ESCO, sfiducia nei confronti delle nuove tecnologie)	Sì/No	1	2	3	4	5
<b>C17.</b> Mancanza di un'efficace diffusione e promozione	Sì/No	1	2	3	4	5

<b>Barriere sociali, culturali e comportamentali</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C18.</b> Resistenza al cambiamento, inerzia e/o mancanza di interesse	Sì/No	1	2	3	4	5
<b>C19.</b> Mancanza di accettazione da parte dell'opinione pubblica, considerazione dello status sociale, norme sociali e influenza di gruppo come ostacolo	Sì/No	1	2	3	4	5
<b>C20.</b> Razionalità limitata (La razionalità limitata (in inglese, bounded rationality) è l'idea che la razionalità sia limitata quando i singoli prendono decisioni. Tra i limiti figurano la difficoltà del problema che richiede una decisione, la capacità cognitiva della mente e il tempo a disposizione per adottare la decisione. Chi è incaricato di prendere decisioni, in questo caso, agisce cercando una soluzione che soddisfi tutte le parti in quel determinato momento, e non cercando una soluzione ottimale. .)	Sì/No	1	2	3	4	5
<b>C21.</b> Riluttanza (a finanziare l'efficienza energetica, a sostenere)	Sì/No	1	2	3	4	5
<b>C22.</b> In attesa di prodotti più maturi	Sì/No	1	2	3	4	5
<b>C23.</b> Riluttanza, mancanza di fiducia nella tecnologia e/o esperienze passate negative	Sì/No	1	2	3	4	5

<b>Barriere politiche e normative</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C24.</b> Mancanza di regolamentazione e legislazione e/o politica contrastante	Sì/No	1	2	3	4	5
<b>C25.</b> Frequenti modifiche della legislazione e/o del quadro normativo	Sì/No	1	2	3	4	5
<b>C26.</b> Mancanza di requisiti obbligatori e applicazione	Sì/No	1	2	3	4	5
<b>C27.</b> Rischi e incertezza relativi ad aspetti strategici che possono influenzare il progetto	Sì/No	1	2	3	4	5

<b>Barriere istituzionali/organizzative</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C28.</b> Prassi istituzionale (ossia questioni relative al quadro istituzionale)	Sì/No	1	2	3	4	5
<b>C29.</b> Domanda Mancanza di procedure semplificate e procedure complesse/difficili	Sì/No	1	2	3	4	5
<b>C30.</b> Burocrazia	Sì/No	1	2	3	4	5
<b>C31.</b> Mancanza di una visione, di piani e di strategie a lungo termine per quanto riguarda il futuro delle infrastrutture pubbliche.	Sì/No	1	2	3	4	5
<b>C32.</b> Pratiche di bilancio pubbliche (ad esempio, metodo di finanziamento competitivo, regole del bilancio pubblico)	Sì/No	1	2	3	4	5
<b>C33.</b> Mancanza di gestione e di sostegno pubblico	Sì/No	1	2	3	4	5



<b>C34.</b> Domanda Processo decisionale (ad esempio, aspetto politico dei problemi di decisione collettiva, tempi brevi per le decisioni)	Si/No	1	2	3	4	5
<b>C35.</b> Mancanza di potere per avviare azioni in materia di energia pulita e di efficienza energetica	Si/No	1	2	3	4	5
<b>C36.</b> Lock-in contrattuale (ossia partenariato/contratti esistenti con i fornitori)	Si/No	1	2	3	4	5

<b>Barriere tecnici e tecnologici</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>C37.</b> Mancanza di capacità e competenze (tecniche)	Si/No	1	2	3	4	5
<b>C38.</b> Mancanza di orientamenti e migliori pratiche	Si/No	1	2	3	4	5
<b>C39.</b> Complessità dei progetti e delle procedure	Si/No	1	2	3	4	5
<b>C40.</b> Infrastrutture inefficienti (ad esempio mancanza di infrastrutture ciclabili/pedonali, mancanza di trasporto ferroviario/infrastruttura, mancanza di infrastrutture per la ricarica dei veicoli elettrici)	Si/No	1	2	3	4	5
<b>C41.</b> Comproprietà	Si/No	1	2	3	4	5
<b>C42.</b> Disponibilità di tecnologia e capacità di manutenzione	Si/No	1	2	3	4	5
<b>C43.</b> Scarsa soddisfazione per le infrastrutture pubbliche	Si/No	1	2	3	4	5
<b>C44.</b> Mancanza di dati	Si/No	1	2	3	4	5
<b>C45.</b> Problemi e limitazioni tecniche (comprese questioni geografiche e logistiche)	Si/No	1	2	3	4	5
<b>C46.</b> Scarsa misurazione e verifica dei risparmi	Si/No	1	2	3	4	5
<b>C47.</b> Rischi — incertezza relativa agli aspetti tecnici e tecnologici del progetto	Si/No	1	2	3	4	5

**C48. Ha incontrato altri ostacoli durante la pianificazione o l'attuazione di un progetto di energia sostenibile che non era stato menzionato in precedenza? In caso affermativo, si prega di fornire una breve spiegazione. Può anche indicare l'importanza della barriera tra parentesi. ad esempio, mancanza di finanziamenti (4)**

#### **D. Fattori trainanti dei progetti in materia di energia sostenibile**

Si prega di i) indicare se **esistono** i seguenti fattori quali fattori che facilitano l'attuazione di progetti nel settore dell'energia sostenibile nel vostro contesto e ii) valutarne **l'importanza** per quanto riguarda la misura in cui essi possono incidere sull'attuazione dei progetti nel settore dell'energia sostenibile **sulla base della Sua esperienza** (indipendentemente dal fatto che tale fattore sia apparso o meno nel progetto).

Per valutare l'importanza di ciascun conducente, utilizzare la seguente classificazione:

- 1 = per niente importante, non facilita il miglioramento del progetto.
- 2= meno importante
- 3 = abbastanza importante, facilita il miglioramento del progetto in una certa misura
- 4 = più che abbastanza importante
- 5= molto importante, promuove l'attuazione del progetto

<b>Fattori economici e finanziari</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D1.</b> Disponibilità di finanziamenti e facile accesso alle fonti di finanziamento	Si/No	1	2	3	4	5



<b>D2.</b> Disponibilità di incentivi (economici)	Si/No	1	2	3	4	5
<b>D3.</b> Risparmi energetici/costi previsti	Si/No	1	2	3	4	5
<b>D4.</b> Aumento del valore immobiliare	Si/No	1	2	3	4	5
<b>D5.</b> Prezzi elevati dell'energia (ad esempio elettricità, benzina, diesel)	Si/No	1	2	3	4	5

<b>Fattori della conoscenza e dell'informazione</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D6.</b> Informazione, conoscenza e consapevolezza	Si/No	1	2	3	4	5
<b>D7.</b> Sostenibilità ed efficienza energetica come priorità del comune	Si/No	1	2	3	4	5
<b>D8.</b> Campagne di diffusione e promozione	Si/No	1	2	3	4	5

<b>Fattori sociali, culturali e comportamentali</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D9.</b> Accettazione/approvazione da parte del pubblico, considerazione dello status sociale e influenza di gruppo come fattore di spinta verso gli investimenti nell'efficienza energetica	Si/No	1	2	3	4	5
<b>D10.</b> Miglioramento del comfort per migliorare la qualità della vita (ad esempio, condizioni di comfort termico, acustiche, ecc.)	Si/No	1	2	3	4	5

<b>Fattori politici e normativi</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D11.</b> Esistenza di una regolamentazione e di una legislazione (ad esempio strumenti politici, etichette, codici)	Si/No	1	2	3	4	5
<b>D12.</b> Esistenza di requisiti obbligatori e applicazione effettiva	Si/No	1	2	3	4	5

<b>Fattori istituzionali/organizzativi</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D13.</b> Domanda Esistenza di una visione, di piani e di strategie a lungo termine per il futuro delle infrastrutture pubbliche	Si/No	1	2	3	4	5
<b>D14.</b> Partenariati (Partenariato con altre organizzazioni comunitarie quali, tra l'altro, i servizi pubblici, le ONG e le autorità preposte alla conservazione. .)	Si/No	1	2	3	4	5

<b>Fattori tecnici e tecnologici</b>	<b>Esistenza</b>	<b>Importanza</b>				
<b>D15.</b> Disponibilità di capacità e competenze (tecniche)	Si/No	1	2	3	4	5
<b>D16.</b> Disponibilità di orientamenti e migliori pratiche	Si/No	1	2	3	4	5
<b>D17.</b> La misurazione e la verifica dei risparmi possono stimolare l'avvio di attività di ammodernamento	Si/No	1	2	3	4	5

**D18.** Vi sono altri fattori che incidono positivamente sulla pianificazione o sull'attuazione di un progetto energetico sostenibile che non erano stati menzionati in precedenza? In caso affermativo, si prega di fornire il contributo. Potete anche indicare l'importanza del fattore trainante tra parentesi.

e.g., ad esempio, l'esistenza di incentivi economici (4)

## E. Altri

**E1.** Vorresti ricevere un feedback sulla base delle vostre risposte?

- Sì
- No



**E2. Domanda** In caso di risposta affermativa alla domanda precedente, indicare il nome del facilitatore: \_\_\_\_\_

**E3.** Si prega di fornire il messaggio di posta elettronica in cui desidera ricevere il feedback \_\_\_\_\_

**E4.** Desideriamo informarLa in merito ai nostri risultati una volta completata l'analisi dei dati del sondaggio. Se accetta di essere ricontattato a tal fine, La preghiamo di inserire il Suo indirizzo e-mail di contatto qui sotto. I dati personali non saranno collegati al questionario.

Grazie per aver contribuito al sondaggio! In caso di domande o commenti di carattere generale sul sondaggio o sui nostri progetti, è possibile contattarci.

## Spanish version

### Encuesta PROSPECT+ sobre las barreras y las palancas de los proyectos de energía sostenible

#### Bienvenida e introducción

Estimado participante,

Esta encuesta se está llevando a cabo como parte del proyecto «PROSPECT+ Desarrollo de capacidades para las ciudades y regiones — ¡de la teoría a la práctica!», financiado por el programa de investigación e innovación Horizonte 2020 de la Unión Europea en el marco del acuerdo de subvención n.º 101023271. El proyecto PROSPECT+ tiene como objetivo aumentar la capacitación de las autoridades regionales y locales en materia de financiación, ejecución, seguimiento adecuado y verificación de planes energéticos eficaces, eficientes y sostenibles. Para más información, visite el sitio web del proyecto: <https://h2020prospect.eu/>

Con esta encuesta nuestro objetivo es identificar los factores que afectan a la ejecución de proyectos de energía sostenible mediante aportaciones de representantes de las autoridades locales y regionales o de sus agencias de energía y clima.

Los resultados de la encuesta contribuirán a determinar los retos y oportunidades que pueden aprovecharse para ejecutar con éxito proyectos de energía sostenible, y se referirán a una serie de consideraciones importantes para los responsables políticos y legisladores, que serán útiles a la hora de iniciar y evaluar las actividades locales en materia de energía sostenible.

Completar esta encuesta lleva unos 15 minutos.

Gracias de antemano por su participación.

Para más información, contacta con: Danai Sofía Exintaveloni ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\*Acepto voluntariamente participar en esta investigación y confirmo que he leído y aceptado la [política de privacidad](#)

- Estoy de acuerdo
- No estoy de acuerdo

#### A. Antecedentes personales

**A1. Nombre de su organización:** \_\_\_\_\_

**A2. Tipo de organización:**

- Municipio
- Agencia de Energía y Clima
- Otros

**A3. Si ha respondido «Otros», especifique:** \_\_\_\_\_

**A4. Región/Ciudad:** \_\_\_\_\_

**A5. País:** \_\_\_\_\_

**A6. ¿Participa en PROSPECT +?**

- Sí, soy mentor
- Sí, soy mentee
- No, no soy participante de PROSPECT +

**A7. Si ha respondido «Sí» en la pregunta anterior, indique su nombre de grupo:**

\_\_\_\_\_

**A8. ¿Ha participado en PROSPECT?**

- Sí, fui mentor
- Sí, fui mentee
- No, no fui participante en PROSPECT

**A9. ¿Cuál es su experiencia laboral en materia de eficiencia energética y cuestiones relacionadas con la energía (años de trabajo en este ámbito)?**

- Menos de 3 años
- 3 a 5 años
- 6 a 10 años
- Más de 10 años

**A10. ¿Qué opción describe su identidad de género?**

- Hombre
- Mujer
- Otros
- Prefiero no responder

**A12. ¿Tiene experiencia de trabajo en proyectos de energía sostenible?**

- Sí
- No

**B. Ámbito temático y antecedentes de la organización****B1. ¿Cuántos habitantes tiene su municipio?**

- <5.000 (ciudad de tamaño muy pequeño)
- 5.000-50.000 (pequeña y mediana ciudad)
- 50.000-100.000 (pequeño centro urbano)
- 100.000-250.000 (centro urbano medio)
- 250.000-1.000.000 (gran centro urbano)
- >1.000.000 (área metropolitana)

**B2. ¿Ha adoptado/desarrollado su ciudad un plan de acción en materia de energía sostenible (SECAP) o un plan equivalente?**

- Sí
- No
- Otros (especificar más abajo)

**B3. Si ha respondido «Otros» en la pregunta anterior, explique su respuesta:**

En PROSPECT + utilizamos la siguiente categorización de proyectos de energía sostenible en cinco áreas temáticas:

The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

**B4. ¿Para qué área temática desea cumplimentar el cuestionario?**

- Edificios públicos
- Edificios privados
- Iluminación pública
- Transporte
- Intersectorial

**B5. ¿Ha implementado el municipio alguna medida de eficiencia energética/energía sostenible en el área temática que ha indicado en la pregunta anterior en los últimos 5 años?**

- Sí
- No
- La implementación ha comenzado, pero aún no se ha completado

**B6. ¿Ha implementado el municipio medidas de eficiencia energética / energía sostenible en alguna de las otras áreas temáticas en los últimos 5 años?**

- Sí
- No
- La implementación ha comenzado, pero aún no se ha completado

**B7. En caso afirmativo, indique en cuál:**

- Edificios públicos



- Edificios privados
- Iluminación pública
- Transporte
- Intersectorial

**B8. ¿Tiene previsto el municipio llevar a cabo al menos una medida de eficiencia energética / energía sostenible en el área temática para la que está cumplimentando el cuestionario en los 2 próximos años?**

- Sí
- No

**B9. ¿Tiene previsto el municipio llevar a cabo al menos una medida de eficiencia energética/energía sostenible en cualquiera de las otras áreas temáticas en los 2 próximos años?**

- Sí
- No

**B10. ¿Existe algún método de toma de decisiones?**

- Sí
- No

**B11. En caso afirmativo ¿cuál? Descríbalo:**

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**B12. En caso negativo, describa el proceso de toma de decisiones sobre el orden en que se ejecutarán los proyectos de planes sostenibles:**

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Las siguientes preguntas se centran en los diferentes obstáculos e impulsores que pueden identificarse en proyectos de energía sostenible en ciudades y municipios.

Antes de este elaborar cuestionario, realizamos una revisión exhaustiva de los diferentes factores que pueden afectar positiva o negativamente a la ejecución de proyectos de energía sostenible, centrándonos en las cinco áreas temáticas del proyecto [Horizonte 2020 PROSPECT +](#)

Teniendo en cuenta tus aportaciones, nuestro objetivo es llevar a cabo un análisis de Debilidades-Fortalezas-Oportunidades-Amenzas (DAFO) en el que en el que clasificar los diferentes factores identificados con respecto a sus características internas o externas y evaluar su importancia.

Le rogamos que responda si los diferentes factores están presentes como barrera/conductor en su contexto, utilizando una respuesta binaria (sí o no), y el grado de importancia de la barrera/conductor según su percepción y experiencia, utilizando una escala Likert de 5 puntos (1 = nada importante, 5 = extremadamente importante). Esta segunda medida pretende identificar los factores positivos y negativos más importantes que afectan a la ejecución de proyectos de energía sostenible, proporcionando así una serie de consideraciones importantes a los responsables de la toma de decisiones que resulten útiles a la hora de iniciar o evaluar las acciones locales en materia de energía sostenible.

**B13. ¿Está usted contando con un proyecto específico en el ámbito temático que elija más arriba?**

- Sí, respondo al cuestionario sobre la base de un proyecto que se ha ejecutado en el pasado.
- Sí, respondo al cuestionario sobre la base de un proyecto/propuesta que se encuentra actualmente en fase de desarrollo.



- No, respondo al cuestionario en base a mi experiencia en este ámbito temático sin tener en cuenta un proyecto específico.

### C. Obstáculos en los proyectos de energía sostenible

Indique si los siguientes factores **existen** como obstáculos para la ejecución de proyectos de energía sostenible en su contexto y ii) evalúe su **importancia** en cuanto al grado en el que pueden afectar a la ejecución de proyectos de energía sostenible **en base a su experiencia** (independientemente de si este obstáculo estuvo presente o no en su proyecto).

Para valorar la importancia de cada barrera, utilice la siguiente calificación:

- 1 = nada importante, no limita la mejora del proyecto.
- 2 = menos importante
- 3 = bastante importante, retrasa o limita la mejora del proyecto
- 4 = más que bastante importante
- 5 = muy importante, es una barrera fundamental en el impedimento de la ejecución del proyecto

<b>Obstáculos económicos y financieros</b>	<b>Existencia</b>	<b>Importancia</b>				
<b>C1.</b> Pregunta Falta de financiación y acceso a fuentes de financiación	Sí/No	1	2	3	4	5
<b>C2.</b> Falta de recursos (por ejemplo, falta de recursos humanos, recursos limitados para evaluar las oportunidades, falta de tiempo y recursos para encontrar información)	Sí/No	1	2	3	4	5
<b>C3.</b> Elevada inversión inicial y/o período largo de amortización	Sí/No	1	2	3	4	5
<b>C4.</b> Falta de incentivos (económicos)	Sí/No	1	2	3	4	5
<b>C5.</b> 'Incentivos divididos' y problema principal-agente (El problema principal-agente se produce cuando una persona o entidad (el «agente») puede tomar decisiones o adoptar medidas en nombre de otra persona o entidad (el «principal»), o que la afecten a esta. Este dilema existe en circunstancias en las que los agentes están motivados para actuar en su propio interés, que es contrario a los de sus principales. .)	Sí/No	1	2	3	4	5
<b>C6.</b> El proyecto no tiene ánimo de lucro	Sí/No	1	2	3	4	5
<b>C7.</b> Pregunta Bajo ahorro previsto de energía/costes	Sí/No	1	2	3	4	5
<b>C8.</b> Otros costes (por ejemplo, costes ocultos y de transacción)	Sí/No	1	2	3	4	5
<b>C9.</b> Interferencia en el trabajo diario (es decir, perturbación de la vida cotidiana y 'factor agobio' previsto)	Sí/No	1	2	3	4	5
<b>C10.</b> Crisis financiera (la economía en general está en una pendiente descendente, por ejemplo, una elevada tasa de inflación)	Sí/No	1	2	3	4	5
<b>C11.</b> Pregunta Inestabilidad en los precios de la energía	Sí/No	1	2	3	4	5
<b>C12.</b> Situación económica/financiera desfavorable del ejecutor del proyecto	Sí/No	1	2	3	4	5
<b>C13.</b> Incertidumbre relacionada con los aspectos económicos de los proyectos (por ejemplo, incertidumbre sobre el ahorro, efecto rebote, etc.)	Sí/No	1	2	3	4	5

<b>Obstáculos al conocimiento y la información</b>	<b>Existencia</b>	<b>Importancia</b>				
<b>C14.</b> Falta de información, conocimiento y sensibilización	Sí/No	1	2	3	4	5
<b>C15.</b> Actividad de baja prioridad	Sí/No	1	2	3	4	5
<b>C16.</b> Desconfianza (es decir, falta de confianza en auditorías energéticas y en las medidas basadas en ellas, desconfianza informativa, falta de confianza en las ESCOs, desconfianza de las nuevas tecnologías)	Sí/No	1	2	3	4	5



C17. Pregunta Falta de difusión y promoción eficaces Sí/No 1 2 3 4 5

### Barreras sociales, culturales y de comportamiento

**Existencia Importancia**

C18. Resistencia al cambio, inercia y/o falta de interés Sí/No 1 2 3 4 5

C19. Falta de aceptación pública, consideración de la situación social, normas sociales e influencia del grupo como obstáculo Sí/No 1 2 3 4 5

C20. Racionalidad delimitada (Una racionalidad delimitada es la idea de que la racionalidad es limitada cuando los particulares toman decisiones. Las limitaciones incluyen la dificultad del problema que requiere una decisión, la capacidad cognitiva de la mente y el tiempo disponible para tomar la decisión. En este sentido, los responsables de la toma de decisiones actúan como satisfechos, buscando una solución satisfactoria, con todo lo que tiene actualmente en lugar de una solución óptima.) Sí/No 1 2 3 4 5

C21. Falta de voluntad (para financiar la eficiencia energética, para incurrir en deuda) Sí/No 1 2 3 4 5

C22. A la espera de productos más maduros Sí/No 1 2 3 4 5

C23. Reticencia, falta de confianza en la tecnología y/o experiencias pasadas negativas Sí/No 1 2 3 4 5

### Obstáculos políticos y reglamentarios

**Existencia Importancia**

C24. Falta de reglamentación y legislación y/o políticas contradictorias Sí/No 1 2 3 4 5

C25. Cambios frecuentes en la legislación o el marco regulador Sí/No 1 2 3 4 5

C26. Falta de requisitos obligatorios y de ejecución Sí/No 1 2 3 4 5

C27. Riesgos: incertidumbre relacionada con aspectos normativos que pueden influir en el proyecto Sí/No 1 2 3 4 5

### Obstáculos institucionales/organizativos

**Existencia Importancia**

C28. Práctica institucional (es decir, cuestiones relacionadas con el marco institucional) Sí/No 1 2 3 4 5

C29. Falta de procesos racionalizados y procedimientos complejos/difíciles Sí/No 1 2 3 4 5

C30. Burocracia Sí/No 1 2 3 4 5

C31. Falta de visión, planes y estrategias a largo plazo en relación con el futuro de las infraestructuras públicas. Sí/No 1 2 3 4 5

C32. Prácticas de presupuestación pública (por ejemplo, método de financiación competitivo, normas de presupuestación pública) Sí/No 1 2 3 4 5

C33. Falta de gestión y apoyo gubernamental Sí/No 1 2 3 4 5

C34. Proceso de toma de decisiones (por ejemplo, aspecto político en los problemas de decisión colectiva, breve plazo de las decisiones) Sí/No 1 2 3 4 5

C35. Falta de poder para iniciar acciones en materia de energía limpia y eficiencia energética Sí/No 1 2 3 4 5

C36. Bloqueo contractual (es decir, asociaciones existentes/contratos con proveedores) Sí/No 1 2 3 4 5

### Obstáculos técnicos y tecnológicos

**Existencia Importancia**

C37. Falta de capacidades y competencias (técnicas) Sí/No 1 2 3 4 5

C38. Falta de orientación y buenas prácticas Sí/No 1 2 3 4 5

C39. Complejidad de los proyectos y procedimientos Sí/No 1 2 3 4 5



<b>C40.</b> Infraestructuras ineficientes (por ejemplo, falta de infraestructuras para ciclistas/peatones, falta de infraestructuras ferroviarias o para la recarga de vehículos eléctricos)	Sí/No	1	2	3	4	5
<b>C41.</b> Propiedad conjunta	Sí/No	1	2	3	4	5
<b>C42.</b> Disponibilidad de tecnología y capacidad de mantenimiento	Sí/No	1	2	3	4	5
<b>C43.</b> Escasa satisfacción con la infraestructura pública	Sí/No	1	2	3	4	5
<b>C44.</b> Falta de datos	Sí/No	1	2	3	4	5
<b>C45.</b> Problemas técnicos y limitaciones (incluidas cuestiones geográficas y logísticas)	Sí/No	1	2	3	4	5
<b>C46.</b> Medición y verificación deficientes del ahorro	Sí/No	1	2	3	4	5
<b>C47.</b> Riesgos incertidumbre relacionada con los aspectos técnicos y tecnológicos del proyecto	Sí/No	1	2	3	4	5

**C48. ¿Ha experimentado algún otro obstáculo durante la planificación o la ejecución de un proyecto de energía sostenible que no se ha mencionado anteriormente? En caso afirmativo, facilite su contribución. También puede indicar la importancia del obstáculo entre paréntesis. por ejemplo, falta de financiación (4)**

#### D. Motores de los proyectos de energía sostenible

Indique si **existen** los siguientes factores son impulsores que facilitan la ejecución de proyectos de energía sostenible en su contexto y ii) evalúe su **importancia** en cuanto al grado en que pueden afectar a la ejecución de proyectos de energía sostenible **en base a su experiencia** (independientemente de si este factor estuvo presente o no en su proyecto).

Para valorar la importancia de cada impulsor, utilice la siguiente clasificación:

- 1 = nada importante, no facilita la mejora del proyecto.
- 2= menos importante
- 3 = bastante importante, facilita la mejora del proyecto hasta cierto punto.
- 4 = más que bastante importante
- 5= muy importante, fomenta la ejecución del proyecto

#### Motores económicos y financieros

	Existencia	Importancia				
<b>D1.</b> Disponibilidad de financiación y fácil acceso a las fuentes de financiación	Sí/No	1	2	3	4	5
<b>D2.</b> Disponibilidad de incentivos (económicos)	Sí/No	1	2	3	4	5
<b>D3.</b> Ahorro previsto de energía/costes	Sí/No	1	2	3	4	5
<b>D4.</b> Aumento del valor de los bienes inmuebles	Sí/No	1	2	3	4	5
<b>D5.</b> Pregunta Precios elevados de la energía (por ejemplo, electricidad, gasolina, diesel)	Sí/No	1	2	3	4	5

#### Factores de conocimiento e información

	Existencia	Importancia				
<b>D6.</b> Información, conocimiento y sensibilización	Sí/No	1	2	3	4	5
<b>D7.</b> Sostenibilidad y eficiencia energética como prioridad del municipio	Sí/No	1	2	3	4	5
<b>D8.</b> Campañas de difusión y promoción	Sí/No	1	2	3	4	5

**Existencia Importancia**



### Motores sociales, culturales y de comportamiento

<b>D9.</b> Aceptación/aprobación pública, consideración de la situación social e influencia del grupo como factor impulsor de las inversiones en eficiencia energética	Sí/No	1	2	3	4	5
<b>D10.</b> Mayor confort mejorando la calidad de vida (por ejemplo, condiciones de confort térmico, condiciones acústicas, etc.)	Sí/No	1	2	3	4	5

### Motores políticos y reguladores

	Existencia	Importancia
<b>D11.</b> Existencia de regulación y legislación (por ejemplo, instrumentos políticos, códigos de etiquetas)	Sí/No	1 2 3 4 5
<b>D12.</b> Existencia de requisitos obligatorios y de ejecución efectiva	Sí/No	1 2 3 4 5

### Motores institucionales/organizativos

	Existencia	Importancia
<b>D13.</b> Existencia de una visión, planes y estrategias a largo plazo en relación con el futuro de la infraestructura pública	Sí/No	1 2 3 4 5
<b>D14.</b> Colaboraciones (Colaboración con otras organizaciones comunitarias, como servicios públicos, ONGs y autoridades de conservación, entre otras.)	Sí/No	1 2 3 4 5

### Impulsores técnicos y tecnológicos

	Existencia	Importancia
<b>D15.</b> Disponibilidad de capacidades y competencias (técnicas)	Sí/No	1 2 3 4 5
<b>D16.</b> Disponibilidad de orientación y mejores prácticas	Sí/No	1 2 3 4 5
<b>D17.</b> La medición y verificación del ahorro puede impulsar el compromiso con las actividades de rehabilitación	Sí/No	1 2 3 4 5

**D18.** ¿Hay otros factores que influyan positivamente en la planificación o la ejecución de proyectos de energía sostenible que no se mencionara anteriormente? En caso afirmativo, facilite su contribución. También puede indicar la importancia del impulsor entre paréntesis. por ejemplo, existencia de incentivos económicos (4)

### E. Otros

**E1.** ¿Le gustaría recibir feedback en base a sus respuestas?

- Sí
- No

**E2.** Si ha respondido «Sí» en la pregunta anterior, indique el nombre de su moderador:

**E3.** Indique el correo electrónico en el que desea recibir el feedback:

**E4.** Nos gustaría informarle de los resultados una vez finalizado el análisis de los datos de la encuesta. Si está de acuerdo en que volvamos a ponernos en contacto con usted con este fin, indique a continuación su dirección de contacto. Sus datos personales no estarán vinculados al cuestionario.

¡Gracias por su contribución en la encuesta! Si tiene preguntas o comentarios sobre la encuesta o nuestros proyectos, no dude en ponerse en contacto con nosotros.



## Czech version

# PROSPECT+ Průzkum o překážkách a hnacích silách projektů v oblasti udržitelné energie

## Uvítání a úvod

Milí účastníci,

tento průzkum se provádí v rámci projektu „PROSPECT+ – Budování kapacit pro města a regiony – od učení k akci!“ financovaného z programu Evropské unie pro výzkum a inovace Horizont 2020 v rámci grantové dohody č. 101023271. Cílem projektu PROSPECT+ je zvýšit budování kapacit regionálních a místních orgánů, pokud jde o financování, provádění, řádné monitorování a ověřování účinných, efektivních a udržitelných energetických plánů. Další informace naleznete na internetových stránkách projektu: <https://h2020prospect.eu/>

V tomto průzkumu se snažíme určit faktory, které ovlivňují provádění projektů v oblasti udržitelné energetiky, a to na základě příspěvků zástupců místních a regionálních orgánů nebo jejich energetických/klimatických agentur.

Výsledky průzkumu přispějí k určení výzev a příležitostí, které lze využít k úspěšnému provádění projektů v oblasti udržitelné energetiky, a budou odkazovat na řadu důležitých závěrů pro činitele s rozhodovací pravomocí a tvůrce politik, které jsou užitečné při iniciování a hodnocení místních činností v oblasti udržitelné energetiky.

Vyplnění tohoto průzkumu trvá přibližně 15 minut.

Předem vám děkujeme za odpovědi.

Kontaktní osoba pro další informace: Danai Sofia Exintaveloni ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\* Dobrovolně souhlasím s účastí na tomto výzkumu a potvrzuji, že jsem si přečetl a přijal(a) zásady [ochrany soukromí](#)

- Souhlasím
- Nesouhlasím

## A. Základní údaje

**A1. Název vaší organizace:** \_\_\_\_\_

**A2. Typ organizace:**

- Obec/mesto
- Agentura pro energetiku a klima
- Ostatní

**A3. Pokud jste zvolili „Jiné“, upřesněte:** \_\_\_\_\_

**A4. Region/město:** \_\_\_\_\_

**A5. Země:** \_\_\_\_\_

**A6. Jste účastníkem programu PROSPECT+?**

- Ano, jsem mentor
- Ano, jsem mentee (účastník)
- Ne, nejsem účastníkem PROSPECT+



**A7. Pokud jste v předchozí otázce odpověděli „Ano“, uveďte název vaší skupiny:**

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**A8. Byl/a jste účastníkem programu PROSPECT?**

- Ano, byl jsem mentorem
- Ano, byl/a jsem mentee (účastník)
- Ne, nebyl jsem účastníkem programu PROSPECT

**A9. Jaké jsou vaše pracovní zkušenosti v oblasti energetické účinnosti a otázek souvisejících s energetikou (roky práce v této oblasti)?**

- Méně než 3 roky
- 3 až 5 let
- 6 až 10 let
- Více než 10 let

**A10. Gender**

- Muž
- Ženy
- Jiné
- Nechci uvádět

**A13. Máte zkušenosti s prací na projektech udržitelné energetiky?**

- Ano
- Ne

## **B. Thematic area and Background of the organisation**

**B1. Kolik obyvatel má vaše obec?**

- <5.000
- 5.000-50.000
- 50.000-100.000
- 100.000-250.000
- 250.000-1.000.000
- >1.000.000

**B2. Přijalo/vypracovalo vaše město plán pro udržitelnou energetiku a akční plán (SECAP) nebo rovnocenný plán?**

- Ano
- Ne
- Jiné (prosím uveďte)

**B3. Pokud jste v předchozí otázce odpověděli „Jiné“, vysvětlete prosím:**

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V PROSPECT+ používáme následující kategorizaci projektů udržitelné energie v pěti tematických oblastech:



The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

**B4. Pro kterou tematickou oblast byste chtěli dotazník vyplnit?**

- Veřejné budovy
- Soukromé budovy
- Veřejné osvětlení
- Doprava
- Mezisektorová spolupráce

**B5. Provedla obec v posledních pěti letech opatření nebo akce v oblasti energetické účinnosti/udržitelné energie v tematické oblasti, které jste uvedli v předchozí otázce?**

- Ano
- Ne
- Realizace již bylo zahájena, ale dosud nebyla dokončena.

**B6. Provedla obec v posledních pěti letech opatření nebo akce v oblasti energetické účinnosti/udržitelné energie v některé z dalších tematických oblastí?**

- Ano
- Ne
- Realizace již bylo zahájena, ale dosud nebyla dokončena.

**B7. Pokud ano, uveďte, v jakém:**

- Veřejné budovy
- Soukromé budovy
- Veřejné osvětlení
- Doprava
- Mezisektorová spolupráce

**B8. Plánuje obec provést v následujících dvou letech alespoň jedno opatření nebo opatření v oblasti energetické účinnosti/udržitelné energie v tematické oblasti, pro kterou dotazník vyplňujete?**

- Ano
- Ne



**B9. Plánuje obec provést v následujících dvou letech alespoň jedno opatření nebo opatření v oblasti energetické účinnosti/udržitelné energie ve kterékoli z dalších tematických oblastí?**

- Ano
- Ne

**B10. Existuje rozhodovací metoda/rámec pro výběr opatření na realizaci?**

- Ano
- Ne

**B11. Pokud ano, který? Prosím popište:**

---

**B12. Pokud ne, popište postup rozhodování o pořadí, v jakém budou projekty z udržitelných plánů realizovány:**

---

Následující otázky se zaměřují na různé překážky a hnací síly, které lze identifikovat v projektech udržitelné energetiky ve městech a obcích.

Před tímto dotazníkem jsme provedli komplexní přezkum literatury týkající se různých faktorů, které mohou pozitivně nebo negativně ovlivnit provádění projektů v oblasti udržitelné energetiky, se zaměřením na pět tematických oblastí projektu [Horizont 2020 PROSPECT+](#).

S přihlédnutím k Vaším příspěvkům se snažíme provést analýzu silných a slabých stránek, možností a hrozeb (SWOT), v níž rozčleníme různé zjištěné faktory s ohledem na jejich vnitřní nebo vnější charakteristiky a posoudíme jejich význam.

Žádáme Vás, abyste odpověděli, zda jsou různé faktory ve vašem kontextu přítomny jako překážka/hnací síla, a to pomocí binární odpovědi (ano nebo ne), a míru důležitosti překážky/hnací síla podle vašeho vnímání a zkušeností pomocí pětibodové Likertovy stupnice (1 = vůbec nedůležité, 5 = mimořádně důležitá). Cílem tohoto druhého opatření je určit nejdůležitější pozitivní a negativní faktory, které ovlivňují provádění projektů v oblasti udržitelné energetiky, a poskytnout tak subjektům s rozhodovací pravomocí řadu důležitých úvah, které jsou užitečné při iniciování nebo hodnocení místních činností v oblasti udržitelné energie.

**B13. Máte při vyplňování tohoto dotazníku na paměti konkrétní projekt v tematické oblasti, kterou si zvolíte?**

- Ano, odpovídám na dotazník pro projekt, který byl realizován v minulosti.
- Ano, odpovídám na dotazník na základě projektu/návrhu, který se v současné době připravuje.
- Ne, na základě svých zkušeností v této tematické oblasti odpovídám na dotazník, aniž bych měl na paměti konkrétní projekt.

### C. Překážky v projektech udržitelné energetiky

i) uveďte, zda ve vašem kontextu **existují** následující faktory jako **překážky** bránící realizaci projektů udržitelné energetiky, a

ii) na **základě svých zkušeností (bez ohledu na to, zda se tato překážka objevila ve vašem projektu), vyhodnotit jejich význam, pokud jde o míru, do jaké mohou ovlivnit provádění projektů udržitelné energetiky.**

Pro hodnocení významu každé překážky použijte toto hodnocení:

- 1 = vůbec nedůležité, neomezuje zlepšení projektu



- 2 = méně než poměrně důležité
- 3 = poměrně důležité, zpoždí nebo omezuje zlepšení projektu
- 4 = více než poměrně důležité
- 5 = velmi důležité, má zásadní význam pro to, aby se zabránilo realizaci projektu.

<b>Ekonomické a finanční překážky</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>C1.</b> Nedostatek finančních prostředků a přístup ke zdrojům financování	Ano/Ne	1	2	3	4	5
<b>C2.</b> Nedostatek zdrojů (např. nedostatek lidských zdrojů, omezené zdroje na posouzení příležitostí, nedostatek času a úsilí při hledání informací)	Ano/Ne	1	2	3	4	5
<b>C3.</b> Vysoká počáteční investice a/nebo dlouhá doba návratnosti	Ano/Ne	1	2	3	4	5
<b>C4.</b> Nedostatek (hospodářských) pobídek	Ano/Ne	1	2	3	4	5
<b>C5.</b> Rozdělené pobídky a "agent problem" ("Agent problem" nastává tehdy, je-li jedna osoba nebo subjekt (dále jen „zástupce“) schopna přijímat rozhodnutí a/nebo jednat jménem jiné osoby nebo subjektu nebo s tím související dopady (dále jen „hlavní povinný“). Toto dilema existuje za okolností, kdy jsou zástupci motivováni jednat ve vlastním nejlepší zájmu, což je v rozporu se zájmy jejich zmocnitelů.)	Ano/Ne	1	2	3	4	5
<b>C6.</b> Projekt nevytváří zisk	Ano/Ne	1	2	3	4	5
<b>C7.</b> Nízké očekávané úspory energie/nákladů	Ano/Ne	1	2	3	4	5
<b>C8.</b> Ostatní náklady (např. skryté a transakční náklady)	Ano/Ne	1	2	3	4	5
<b>C9.</b> Zasahování do každodenní práce (tj. narušení běžného života a předpokládaný faktor způsobených potíží)	Ano/Ne	1	2	3	4	5
<b>C10.</b> Finanční krize (celková ekonomika je na sestupném sklonu, např. vysoká míra inflace)	Ano/Ne	1	2	3	4	5
<b>C11.</b> Nestabilita cen energií	Ano/Ne	1	2	3	4	5
<b>C12.</b> Nepříznivý hospodářský/finanční stav realizátora projektu	Ano/Ne	1	2	3	4	5
<b>C13.</b> Riziko a nejistota související s ekonomickými aspekty projektů (např. nejistota ohledně úspor, efekt zpětného nárůstu atd.)	Ano/Ne	1	2	3	4	5
<b>Znalostní a informační bariéry</b>						
<b>C14.</b> Nedostatek informací, znalostí a povědomí	Ano/Ne	1	2	3	4	5
<b>C15.</b> Činnost s nízkou prioritou	Ano/Ne	1	2	3	4	5
<b>C16.</b> Nedůvěra (tj. nedostatečná důvěra v energetické audity a opatření na nich založená, nedůvěra v informace, nedostatečná důvěra v společnosti poskytující energetické služby, nedůvěra v nové technologie)	Ano/Ne	1	2	3	4	5
<b>C17.</b> Nedostatečné účinné šíření a propagace	Ano/Ne	1	2	3	4	5
<b>Sociální, kulturní a behaviorální překážky</b>						
<b>C18.</b> Odolnost vůči změnám, setrvačnost a/nebo nedostatek zájmu	Ano/Ne	1	2	3	4	5
<b>C19.</b> Nedostatečná akceptace ze strany veřejnosti, zohlednění sociálního postavení, sociální normy a vliv skupiny jako překážka	Ano/Ne	1	2	3	4	5
<b>C20.</b> Omezená racionálnost (Omezená racionálnost je myšlenka, že při rozhodování jednotlivců je racionálnost omezená. Mezi omezení patří obtížnost problému vyžadujícího rozhodnutí, kognitivní schopnost mysli a čas, který je k dispozici pro přijetí rozhodnutí. Činitelé s rozhodovací pravomocí v tomto ohledu jednají jako "uspokojovači", kteří usilují o uspokojivé řešení s tím, co má v současné době k dispozici, spíše než o optimální řešení.)	Ano/Ne	1	2	3	4	5
<b>C21.</b> Neochota (financovat energetickou účinnost, nabýt dluh)	Ano/Ne	1	2	3	4	5
<b>C22.</b> Čekání na vyspělé výrobky	Ano/Ne	1	2	3	4	5



<b>C23.</b> Neochota, nedostatečná důvěra v technologii a/nebo negativní zkušenosti z minulosti	Ano/Ne	1	2	3	4	5
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<b>Politické a regulační překážky</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>C24.</b> Nedostatečná regulace a právní předpisy a/nebo protichůdná politika	Ano/Ne	1	2	3	4	5
<b>C25.</b> Časté změny právních předpisů a/nebo regulačního rámce	Ano/Ne	1	2	3	4	5
<b>C26.</b> Chybějící povinné požadavky a prosazován	Ano/Ne	1	2	3	4	5
<b>C27.</b> Rizika a nejistota související s politickými aspekty, které mohou projekt ovlivnit	Ano/Ne	1	2	3	4	5

<b>Institucionální/organizační překážky</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>C28.</b> Institucionální praxe (tj. otázky související s institucionálním rámcem)	Ano/Ne	1	2	3	4	5
<b>C29.</b> Nedostatek zjednodušeného procesu a složité/obtížné postupy	Ano/Ne	1	2	3	4	5
<b>C30.</b> Byrokracie	Ano/Ne	1	2	3	4	5
<b>C31.</b> Neexistence dlouhodobé vize, plánů a strategií týkajících se budoucnosti veřejné infrastruktury.	Ano/Ne	1	2	3	4	5
<b>C32.</b> Postupy sestavování veřejných rozpočtů (např. metoda konkurenčního financování, pravidla pro sestavování veřejných rozpočtů)	Ano/Ne	1	2	3	4	5
<b>C33.</b> Nedostatek řízení a státní podpory	Ano/Ne	1	2	3	4	5
<b>C34.</b> Rozhodovací proces (např. politický aspekt v otázkách kolektivního rozhodování, krátký časový rámec rozhodnutí)	Ano/Ne	1	2	3	4	5
<b>C35.</b> Nedostatek moci pro zahájení opatření v oblasti čisté energie a energetické účinnosti	Ano/Ne	1	2	3	4	5
<b>C36.</b> Smluvní uzamčení (tj. stávající partnerství/smlouvy s dodavateli)	Ano/Ne	1	2	3	4	5

<b>Technické a technologické překážky</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>C37.</b> Nedostatek (technických) schopností a dovednost	Ano/Ne	1	2	3	4	5
<b>C38.</b> Nedostatek pokynů a osvědčených postupů	Ano/Ne	1	2	3	4	5
<b>C39.</b> Složitost projektů a postupů	Ano/Ne	1	2	3	4	5
<b>C40.</b> Neefektivní infrastruktura (např. nedostatek cyklistické/pěší infrastruktury, chybějící železniční doprava/infrastruktura, nedostatečná infrastruktura pro dobíjení elektrických vozidel)	Ano/Ne	1	2	3	4	5
<b>C41.</b> Společné odpovědnost	Ano/Ne	1	2	3	4	5
<b>C42.</b> Dostupnost technologií a schopnosti údržby	Ano/Ne	1	2	3	4	5
<b>C43.</b> Nízká spokojenost s veřejnou infrastrukturou	Ano/Ne	1	2	3	4	5
<b>C44.</b> Nedostatek dat	Ano/Ne	1	2	3	4	5
<b>C45.</b> Technické problémy a omezení (včetně zeměpisných a logistických otázek)	Ano/Ne	1	2	3	4	5
<b>C46.</b> Slabé měření a ověřování úspor	Ano/Ne	1	2	3	4	5
<b>C47.</b> Rizika a nejistota související s technickými a technologickými aspekty projektu	Ano/Ne	1	2	3	4	5

**C48.** Setkali jste se při plánování nebo provádění projektu udržitelné energetiky s jinou překážkou, která nebyla dříve zmíněna? Pokud ano, uveďte svůj příspěvek. Můžete také uvést význam překážky v závorkách.

např. nedostatek finančních prostředků (4)



#### D. Hnací síly projektů v oblasti udržitelné energetiky

i) uveďte, zda ve vašem kontextu **existují** následující **hnací síly** usnadňující provádění projektů v oblasti udržitelné energie, a

ii) na **základě svých zkušeností (bez ohledu na to, zda se tento faktor objevil ve vašem projektu), vyhodnotit jejich význam, pokud jde o míru, do jaké mohou ovlivnit provádění projektů v oblasti udržitelné energetiky.**

Pro hodnocení významu každé hnací síly použijte následující hodnocení:

- 1 = vůbec nedůležité, neusnadňuje zlepšení projektu.
- 2 = méně než poměrně důležité
- 3 = poměrně důležité, usnadňuje zlepšení projektu do určité míry
- 4 = více než poměrně důležité
- 5 = velmi důležité, podporuje provádění projektu

<b>Hospodářské a finanční faktory</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D1.</b> Dostupnost financování a snadný přístup ke zdrojům financování	Ano/Ne	1	2	3	4	5
<b>D2.</b> Dostupnost (hospodářských) pobídek	Ano/Ne	1	2	3	4	5
<b>D3.</b> Předpokládané úspory energie/nákladů	Ano/Ne	1	2	3	4	5
<b>D4.</b> Zvýšená hodnota nemovitosti	Ano/Ne	1	2	3	4	5
<b>D5.</b> Vysoké ceny energie (např. &nbsp;elektřina, benzin, motorová nafta)	Ano/Ne	1	2	3	4	5

<b>Znalostní a informační hnací síly</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D6.</b> Informace, znalosti a povědomí	Ano/Ne	1	2	3	4	5
<b>D7.</b> Udržitelnost a energetická účinnost jako priorita obce	Ano/Ne	1	2	3	4	5
<b>D8.</b> Informační a propagační kampaně	Ano/Ne	1	2	3	4	5

<b>Sociální, kulturní a behaviorální faktor</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D9.</b> Přijetí/schválení ze strany veřejnosti, zohlednění sociálního postavení a skupinový vliv jako faktor podněcující investice do energetické účinnosti	Ano/Ne	1	2	3	4	5
<b>D10.</b> Lepší pohodlí zlepšující kvalitu života (např. podmínky tepelné pohody, akustické podmínky atd.	Ano/Ne	1	2	3	4	5

<b>Politické a regulační faktory</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D11.</b> Existence regulace a právních předpisů (např. politických nástrojů, označení a kódů)	Ano/Ne	1	2	3	4	5
<b>D12.</b> Existence povinných požadavků a účinné vymáhání	Ano/Ne	1	2	3	4	5

<b>Institucionální/organizační hybné síly</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D13.</b> Existence dlouhodobé vize, plánů a strategií týkajících se budoucnosti veřejné infrastruktury	Ano/Ne	1	2	3	4	5
<b>D14.</b> Partnerství ( Partnerství s dalšími komunitními organizacemi, jako jsou mimo jiné veřejné služby, nevládní organizace a orgány pro ochranu přírody..)	Ano/Ne	1	2	3	4	5



<b>Technické a technologické faktory</b>	<b>Existence</b>	<b>Důležitost</b>				
<b>D15.</b> Dostupnost (technických) kapacit a dovedností	Ano/Ne	1	2	3	4	5
<b>D16.</b> Otázka Dostupnost pokynů a osvědčených postupů	Ano/Ne	1	2	3	4	5
<b>D17.</b> Měření a ověřování úspor může vést k zapojení do renovací	Ano/Ne	1	2	3	4	5

**D18.** Existují nějaké další faktory, které pozitivně ovlivňují plánování nebo provádění projektu udržitelné energetiky, které nebyly dříve zmíněny? Pokud ano, uveďte svůj příspěvek. V závorkách můžete rovněž uvést význam řidiče.

např. existence ekonomických pobídek (4)

### E. Ostatní

**E1.** Chcete získat zpětnou vazbu na základě vašich odpovědí?

- Ano
- Ne

**E2.** Pokud jste v předchozí otázce odpověděli „Ano“, uveďte prosím jméno svého zprostředkovatele: \_\_\_\_\_

**E3.** Uveďte prosím svůj e-mail, v němž byste chtěli získat zpětnou vazbu: \_\_\_\_\_

**E4.** Rádi bychom Vás informovali o našich výsledcích, jakmile dokončíme analýzu údajů z průzkumu. Pokud souhlasíte s tím, že Vás můžeme za tímto účelem znovu kontaktovat, uveďte svou kontaktní e-mailovou adresu níže. Vaše osobní údaje nebudou propojeny s dotazníkem.

Děkujeme vám za účast v průzkumu! Máte-li obecné dotazy nebo připomínky týkající se průzkumu nebo našich projektů, obraťte se na nás.

## Boznian version

### PROSPECT+ Istraživanje o preprekama i pokretačima projekata održive energije

#### Dobrodošlica i uvod

Poštovani učesniče,

Ova anketa se provodi kao dio projekta „PROSPECT+ – Izgradnja kapaciteta za gradove i regije – od učenja do djelovanja!” koji se financira iz programa Europske unije za istraživanja i inovacije, Obzor 2020, u okviru sporazuma o dodjeli bespovratnih sredstava br. 101023271. Cilj projekta PROSPECT+ je povećati izgradnju kapaciteta regionalnih i lokalnih vlasti u pogledu financiranja, provedbe, pravilnog praćenja i provjere djelotvornih, učinkovitih i održivih energetske planova. Za dodatne informacije možete posjetiti internetsku stranicu projekta: <https://h2020prospect.eu/>

U ovoj anketi želimo identificirati čimbenike koji utječu na provedbu projekata održive energije uzimajući u obzir mišljenja predstavnika lokalnih i regionalnih vlasti ili njihovih energetske agencija.

Rezultati ankete pridonijet će identificiranju izazova i mogućnosti koje se mogu iskoristiti za uspješnu provedbu projekata održive energije te će poslužiti kao važna razmatranja za donositelje odluka i kreatora politika, korisna prilikom pokretanja i evaluacije lokalnih aktivnosti u području održive energije.



Ispunjavanje ove ankete će trajati oko 15 minuta.

Unaprijed vam hvala na sudjelovanju!

Kontakt za dodatne informacije: Danai Sofia Exintaveloni ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\* Dobrovoljno pristajem sudjelovati u ovom istraživanju i potvrđujem da sam pročitao/pročitala i prihvaćam [Pravila o privatnosti](#).

- Slažem se
- Ne slažem se

### A. Osobni podaci

**A1. Ime vaše organizacije:** \_\_\_\_\_

**A2. Vrsta organizacije:**

- Općina
- Agencija za energiju/klimatsku politiku
- Ostalo

**A3. Ako ste odgovorili drugo, navedite:** \_\_\_\_\_

**A4. Regija/grad:** \_\_\_\_\_

**A5. Zemlja:** \_\_\_\_\_

**A6. Sudjelujete li u programu PROSPECT+?**

- Da, mentor sam
- Da, ja sam učenik
- Ne, nisam sudionik PROSPECT+

**A7. Ako ste na prethodno pitanje odgovorili 'Da', navedite ime svoje skupine:**

\_\_\_\_\_

**A8. Jeste li sudjelovali u PROSPECT-u?**

- Da, bio sam mentor
- Da, bio sam korisnik
- Ne, nisam sudjelovao/sudionica PROSPECT-a

**A9. Koje je vaše radno iskustvo u području energetske učinkovitosti i energetske pitanja (godine rada u tom području)?**

- Manje od 3 godine
- Od 3 do 5 godina
- 6 do 10 godina
- Više od 10 godina

**A10. Koja opcija opisuje vaš rodni identitet?**

- Muško
- Žena
- Ostalo
- Radije ne bih odgovorio/odgovorila

**A14. Imate li iskustva u projektima održive energije?**

- Da
- Ne



## B. Tematsko područje i kontekst organizacije

### B1. Koliko stanovnika ima vaša općina?

- <5.000 (vrlo mali grad)
- 5.000-50.000 (mali i srednji grad)
- 50.000-100.000 (malo gradsko središte)
- 100.000-250.000 (srednje gradsko središte)
- 250.000-1.000.000 (veliko gradsko središte)
- >1.000.000 (velegradsko područje)

### B2. Je li vaš grad donio/razvio akcijski plan za održivu energiju i akcijski plan (SECAP) ili jednakovrijedan plan?

- Da
- Ne
- Drugo (objasniti u nastavku)

### B3. Ako ste na prethodno pitanje odgovorili „Drugo”, objasnite: \_\_\_\_\_

U programu PROSPECT+ koristimo sljedeću kategorizaciju projekata održive energije u pet tematskih područja:

The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

### B4. Za koje biste tematsko područje željeli ispuniti upitnik?

- Zgrade javne namjene
- Privatne zgrade
- Javna rasvjeta
- Prijevoz
- Međusektorski

### B5. Je li općina provela mjere energetske učinkovitosti/održive energije u tematskom području koje ste naveli u prethodnom pitanju u posljednjih pet godina?

- Da
- Ne
- Provedba je započela, ali još nije dovršena.



**B6. Je li općina u posljednjih pet godina provela mjere energetske učinkovitosti/održive energije u bilo kojem drugom tematskom području?**

- Da
- Ne
- Provedba je započela, ali još nije dovršena.

**B7. Ako je odgovor potvrđan, navedite u kojem slučaju:**

- Zgrade javne namjene
- Privatne zgrade
- Javna rasvjeta
- Prijevoz
- Međusektorski

**B8. Planira li općina provesti barem jednu mjeru energetske učinkovitosti/održive energije u tematskom području za koje ispunjavate upitnik u sljedeće dvije godine?**

- Da
- Ne

**B9. Planira li općina provesti barem jednu mjeru energetske učinkovitosti/održive energije u bilo kojem drugom tematskom području u sljedeće dvije godine?**

- Da
- Ne

**B10. Postoji li metoda donošenja odluka?**

- Da
- Ne

**B11. Ako da, koji? Molimo opišite:**

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**B12. Ako ne, molimo opišite proces donošenja odluka o redoslijedu provedbe projekata iz održivih planova:**

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Sljedeća pitanja usmjerena su na različite prepreke i pokretače koji se mogu identificirati u projektima održive energije u gradovima i općinama.

Prije ovog upitnika, proveli smo opsežan pregled literature o različitim čimbenicima koji mogu pozitivno ili negativno utjecati na provedbu projekata održive energije s naglaskom na pet tematskih područja [H2020 PROSPECT+](#).

Uzimajući u obzir vaš doprinos, cilj nam je provesti analizu Snaga-Slabosti-Prilika-Prijetnji (SWOT) u kojoj ćemo kategorizirati različite identificirane čimbenike u odnosu na njihove unutarnje ili vanjske karakteristike, te ćemo procijeniti njihovu važnost.

Ljubazno vas molimo da odgovorite jesu li različiti čimbenici prisutni kao prepreka/pokretač u vašem kontekstu, koristeći binarni odgovor (da ili ne), te stupanj važnosti prepreke/pokretača prema vašoj percepciji i iskustvu, koristeći Likertovu skalu od 5 stupnjeva (1 = uopće nije važno, 5 = iznimno važno). Ova druga mjera ima za cilj identificirati najvažnije pozitivne i negativne čimbenike koji utječu na provedbu projekata održive energije, te će tako pružiti niz važnih razmatranja za donositelje odluka koji su korisni prilikom pokretanja ili evaluacije lokalnih aktivnosti održive energije.



### B13. Jeste li odgovorili na ovaj upitnik imajući na umu određeni projekt u tematskom području koje odaberete?

- Da, odgovaram na upitnik za projekt koji se provodio u prošlosti.
- Da, odgovaram na upitnik na temelju projekta/prijedloga koji je trenutačno u izradi.
- Ne, odgovaram na upitnik na temelju svojeg iskustva u tom tematskom području, a da pritom nemam na umu konkretan projekt.

### C. Prepreke u projektima održive energije

Molimo vas da (i) navedete **postoje** li sljedeći čimbenici kao prepreke koje ometaju provedbu projekata održive energije u vašem kontekstu i (ii) procijenite njihovu **važnost** u pogledu stupnja u kojem mogu utjecati na provedbu projekata održive energije na **temelju vašeg iskustva** (bez obzira na to je li se ta prepreka pojavila u vašem projektu ili ne).

Kako biste ocijenili važnost svake prepreke, koristite sljedeće ocjene:

- 1 = uopće nije važno, ne ometa napredak projekta..
- 2= manje važno
- 3 = prilično važno, odgađa ili ograničava napredak projekta
- 4 = više od prilično važno
- 5= vrlo važno, ključno je u sprječavanju provedbe projekta

#### Gospodarske i financijske prepreke

	Postojanje	Važnost				
<b>C1.</b> Nedostatak financiranja i pristupa izvorima financiranja	Da/Ne	1	2	3	4	5
<b>C2.</b> Nedostatak resursa (npr. nedostatak ljudskih resursa, ograničeni resursi za procjenu prilika, nedostatak vremena i napora u pronalaženju informacija)	Da/Ne	1	2	3	4	5
<b>C3.</b> Visoka početna ulaganja i/ili dugo razdoblje povrata	Da/Ne	1	2	3	4	5
<b>C4.</b> Nedostatak (gospodarskih) poticaja	Da/Ne	1	2	3	4	5
<b>C5.</b> Suprotstavljeni interesi i nalogodavac – problem zastupnika (Problem nalogodavca i zastupnika nastaje kada jedna osoba ili subjekt („zastupnik“) može donositi odluke i/ili poduzimati radnje u ime druge osobe ili subjekta („glavni obveznik“) ili koje utječu na njih. Ta dvojba postoji u okolnostima u kojima su zastupnici motivirani djelovati u vlastitom najboljem interesu, što je u suprotnosti s interesima nalogodavca)	Da/Ne	1	2	3	4	5
<b>C6.</b> Projekt ne ostvaruje dobit	Da/Ne	1	2	3	4	5
<b>C7.</b> Niske očekivane uštede energije/troškova	Da/Ne	1	2	3	4	5
<b>C8.</b> Ostali troškovi (npr. skriveni i transakcijski troškovi)	Da/Ne	1	2	3	4	5
<b>C9.</b> Uplitanje u svakodnevni rad (tj. poremećaj u uobičajenom životu i očekivani faktor raspršivanja)	Da/Ne	1	2	3	4	5
<b>C10.</b> Financijska kriza (opće gospodarstvo na padu, npr. visoka stopa inflacije)	Da/Ne	1	2	3	4	5
<b>C11.</b> Nestabilnost cijena energije	Da/Ne	1	2	3	4	5
<b>C12.</b> Nepovoljan gospodarski/financijski status provoditelja projekta	Da/Ne	1	2	3	4	5
<b>C13.</b> Rizik i nesigurnost povezani s gospodarskim aspektima projekata (npr. neizvjesnost u pogledu ušteda, povratni učinci itd.)	Da/Ne	1	2	3	4	5

#### Prepreke znanju i informacijama

	Postojanje	Važnost				
<b>C14.</b> Nedostatak informacija, znanja i svijesti	Da/Ne	1	2	3	4	5
<b>C15.</b> Niskoprioritetna aktivnost	Da/Ne	1	2	3	4	5



**C16.** Nepovjerenje (tj. nedostatak povjerenja u energetske preglede i mjere koje se na njima temelje, nepovjerenje u informacije, nedostatak povjerenja u ESCO-e, nepovjerenje prema novim tehnologijama) Da/Ne 1 2 3 4 5

**C17.** Nedostatak učinkovitog širenja i promicanja Da/Ne 1 2 3 4 5

### Društvene, kulturne i bihevioralne prepreke

**Postojanje Važnost**

**C18.** Otpornost na promjenu, inercija i/ili nedostatak interesa Da/Ne 1 2 3 4 5

**C19.** Neprihvatanje javnosti, razmatranje društvenog statusa, društvene norme i grupni utjecaj kao prepreka Da/Ne 1 2 3 4 5

**C20.** Ograničena racionalnost (Ograničena racionalnost je ideja da je racionalnost ograničena kada pojedinci donose odluke. Ograničenja uključuju težinu problema koji zahtijeva donošenje odluke, kognitivne sposobnosti uma i dostupno vrijeme za donošenje odluke. Donositelji odluka, prema ovom pogledu, djeluju kao 'satisficers', tražeći zadovoljavajuće rješenje s onim što imaju u tom trenutku, umjesto optimalnog rješenja.) Da/Ne 1 2 3 4 5

**C21.** Nevoljkost, nedostatak povjerenja u tehnologiju i/ili negativno prethodno iskustvo Da/Ne 1 2 3 4 5

**C22.** Čekanje zrelijih proizvoda Da/Ne 1 2 3 4 5

**C23.** Nevoljkost, nedostatak povjerenja u tehnologiju i/ili negativno prethodno iskustvo Da/Ne 1 2 3 4 5

### Političke i regulatorne prepreke

**Postojanje Važnost**

**C24.** Nedostatak propisa i zakonodavstva i/ili proturječne politike Da/Ne 1 2 3 4 5

**C25.** Česte promjene u zakonodavstvu i/ili regulatornom okviru Da/Ne 1 2 3 4 5

**C26.** Nepostojanje obveznih zahtjeva i provedba Da/Ne 1 2 3 4 5

**C27.** Rizici i nesigurnost povezani s aspektima politike koji mogu utjecati na projekt Da/Ne 1 2 3 4 5

### Institucionalne/organizacijske prepreke

**Postojanje Važnost**

**C28.** Question Institucionalna praksa (tj. pitanja povezana s institucionalnim okvirom) Da/Ne 1 2 3 4 5

**C29.** Nedostatak pojednostavnjenog postupka i složenih/teških postupaka Da/Ne 1 2 3 4 5

**C30.** Birokracija Da/Ne 1 2 3 4 5

**C31.** Nedostatak dugoročne vizije, planova i strategija za budućnost javne infrastrukture Da/Ne 1 2 3 4 5

**C32.** Prakse izrade javnog proračuna (npr. konkurentna metoda financiranja, pravila javnog proračuna) Da/Ne 1 2 3 4 5

**C33.** Nedostatak upravljanja i državne potpore Da/Ne 1 2 3 4 5

**C34.** Postupak donošenja odluka (npr. politički aspekt problema u kolektivnoj odluci, kratak vremenski okvir odluka) Da/Ne 1 2 3 4 5

**C35.** Nedostatak moći za pokretanje mjera za čistu energiju i energetske učinkovitost Da/Ne 1 2 3 4 5

**C36.** Ovisnost o ugovorima (tj. postojeće partnerstvo/ugovori s dobavljačima) Da/Ne 1 2 3 4 5

### Tehničke i tehnološke prepreke

**Postojanje Važnost**

**C37.** Nedostatak (tehničkih) sposobnosti i vještina Da/Ne 1 2 3 4 5

**C38.** Nedostatak smjernica i najboljih praksi Da/Ne 1 2 3 4 5

**C39.** Složenost projekata i postupaka Da/Ne 1 2 3 4 5



<b>C40.</b> Neučinkovita infrastruktura (npr. nedostatak biciklističke/pješačke infrastrukture, nedostatak željezničkog prijevoza/infrastrukture, nedostatak infrastrukture za punjenje električnih vozila)	Da/Ne	1	2	3	4	5
<b>C41.</b> Zajedničko vlasništvo	Da/Ne	1	2	3	4	5
<b>C42.</b> Dostupnost tehnologije i sposobnosti održavanja	Da/Ne	1	2	3	4	5
<b>C43.</b> Niska razina zadovoljstva javnom infrastrukturom	Da/Ne	1	2	3	4	5
<b>C44.</b> Nedostatak podataka	Da/Ne	1	2	3	4	5
<b>C45.</b> Tehnički problemi i ograničenja (uključujući zemljopisna i logistička pitanja)	Da/Ne	1	2	3	4	5
<b>C46.</b> Nedovoljno mjerenje i provjera ušteda	Da/Ne	1	2	3	4	5
<b>C47.</b> Rizici i nesigurnost povezani s tehničkim i tehnološkim aspektima projekta	Da/Ne	1	2	3	4	5

**C48. Jeste li tijekom planiranja ili provedbe projekta održive energije doživjeli neku drugu prepreku koja nije prethodno spomenuta? Ako je odgovor potvrđan, navedite svoj doprinos. Možete navesti i važnost prepreke u zagradi. Additional help available.**  
npr. nedostatak financijskih sredstava (4)

#### D. Pokretači projekata održive energije

Navedite (i) **postoje** li sljedeći čimbenici kao pokretači koji olakšavaju provedbu projekata održive energije u vašem kontekstu i (ii) ocijenite njihovu **važnost** u pogledu mjere u kojoj mogu utjecati na provedbu projekata održive energije na **temelju vašeg iskustva** (neovisno o tome je li se taj pokretač pojavio u vašem projektu ili ne).

Kako biste ocijenili važnost svake prepreke, koristite sljedeće ocjene:

- 1 = uopće nije važno, ne olakšava poboljšanje projekta
- 2 = manje od prilično važnog
- 3 = prilično važno, njime se u određenoj mjeri olakšava poboljšanje projekt
- 4 = više nego prilično važno
- 5 = vrlo važno, potiče provedbu projekta

<b>Gospodarski i financijski pokretači</b>	<b>Postojanje</b>	<b>Važnost</b>				
<b>D1.</b> Dostupnost financiranja i jednostavan pristup izvorima financiranja	Da/Ne	1	2	3	4	5
<b>D2.</b> Dostupnost (gospodarskih) poticaja	Da/Ne	1	2	3	4	5
<b>D3.</b> Očekivane uštede energije/troškova	Da/Ne	1	2	3	4	5
<b>D4.</b> Povećana vrijednost nekretnine	Da/Ne	1	2	3	4	5
<b>D5.</b> Visoke cijene energije (npr. električna energija, benzin, dizel)	Da/Ne	1	2	3	4	5

<b>Pokretači znanja i informacija</b>	<b>Postojanje</b>	<b>Važnost</b>				
<b>D6.</b> Informacije, znanje i svijest	Da/Ne	1	2	3	4	5
<b>D7.</b> Održivost i energetska učinkovitost kao prioritet općine	Da/Ne	1	2	3	4	5
<b>D8.</b> Kampanje širenja i promocije	Da/Ne	1	2	3	4	5



<b>Socijalni, kulturni i bihevioralni pokretači</b>	<b>Postojanje</b>	<b>Važnost</b>
<b>D9.</b> Prihvatanje/odobrenje javnosti, razmatranje socijalnog statusa i utjecaj skupine kao čimbenika koji potiče ulaganja u energetska učinkovitost	Da/Ne	1 2 3 4 5
<b>D10.</b> Poboľšana udobnost koja poboljšava kvalitetu života (npr. uvjeti toplinske ugodnosti, akustični uvjeti itd.)	Da/Ne	1 2 3 4 5
<b>Politički i regulatorni pokretači</b>	<b>Postojanje</b>	<b>Važnost</b>
<b>D11.</b> Postojanje propisa i zakonodavstva (npr. instrumenti politike, oznake i kodeksi)	Da/Ne	1 2 3 4 5
<b>D12.</b> Postojanje obveznih zahtjeva i učinkovita provedba	Da/Ne	1 2 3 4 5
<b>Institucijski/organizacijski pokretači</b>	<b>Postojanje</b>	<b>Važnost</b>
<b>D13.</b> Postojanje dugoročne vizije, planova i strategija za budućnost javne infrastrukture	Da/Ne	1 2 3 4 5
<b>D14.</b> Partnerstva (Partnerstvo s drugim organizacijama u zajednici, kao što su, među ostalim, komunalne službe, nevladine organizacije i tijela nadležna za očuvanje.)	Da/Ne	1 2 3 4 5
<b>Tehnički i tehnološki pokretači</b>	<b>Postojanje</b>	<b>Važnost</b>
<b>D15.</b> Dostupnost (tehničkih) kapaciteta i vještina	Da/Ne	1 2 3 4 5
<b>D16.</b> Dostupnost smjernica i najboljih praksi	Da/Ne	1 2 3 4 5
<b>D17.</b> Mjerenje i provjera ušteda mogu potaknuti sudjelovanje u aktivnostima naknadne ugradnje	Da/Ne	1 2 3 4 5

**D18.** Postoje li drugi pokretači koji pozitivno utječu na planiranje ili provedbu projekta održive energije koji prethodno nisu spomenuti? Ako je odgovor potvrđan, navedite svoj doprinos. Možete navesti i važnost vozača u zagradi.

npr. postojanje gospodarskih poticaja (4)

### **E. Ostalo**

**E1.** Želite li primiti povratne informacije na temelju vaših odgovora?

- Da
- Ne

**E2.** Ako ste na prethodno pitanje odgovorili 'Da', molimo navedite ime vašeg voditelja:

\_\_\_\_\_

**E3.** Molimo navedite svoju e-mail adresu na koju želite primiti povratne informacije:

\_\_\_\_\_

**E4.** Željeli bismo vas obavijestiti o našim rezultatima nakon što završimo s analizom podataka iz ankete. Ako se slažete da vas ponovno kontaktiramo u vezi s ovom svrhom, molimo vas da unesete svoju kontakt adresu e-pošte u nastavku. Vaši osobni podaci neće biti povezani s upitnikom.

\_\_\_\_\_

Hvala što ste sudjelovali u anketi! Ako imate općenita pitanja ili komentare u vezi s anketom ili našim projektima, slobodno nam se obratite.



## French version

### Enquête PROSPECT+ sur les obstacles et les moteurs des projets dans le domaine de l'énergie durable projects

#### Accueil et introduction

Chers participants,

Cette enquête est menée dans le cadre du projet «PROSPECT + Capacity building for cities and regions - from learning to action!» financé par le programme de l'Union européenne pour la recherche et l'innovation Horizon 2020 au titre de la convention de subvention no 101023271.

PROSPECT + vise à renforcer les capacités des autorités régionales et locales en ce qui concerne le financement, la mise en œuvre et le suivi de leurs plans d'actions locaux pour l'énergie et le climat.

Vous pouvez consulter le site web du projet pour de plus amples informations : <https://h2020prospect.eu/>

Vos contributions à cette enquête nous permettront d'identifier les facteurs qui influencent la mise en œuvre des projets locaux ou régionaux sur l'énergie et le climat.

Il faut environ 15 minutes pour répondre à l'enquête.

Merci d'avance pour vos contributions !

Pour toute question, merci de contacter Danaï Sofia Exintaveloni de l'Université du Pirée, partenaire du projet ([dexint@unipi.gr](mailto:dexint@unipi.gr))

\* Question Je consens volontairement à participer à cette recherche et je confirme avoir lu et accepter la politique en [matière de protection de la vie privée](#). [single choice, mandatory]

- Je consens.
- Je ne consens pas.

#### A. Votre profil

**A1. Nom de votre organisation:** \_\_\_\_\_

**A2. ype d'organisation:**

- Municipalité
- Agence Energie/Climat
- Autre

**A3. Si «Autre», merci de préciser:** \_\_\_\_\_

**A4. Région/Ville:** \_\_\_\_\_

**A5. Pays:** \_\_\_\_\_

**A6. Êtes-vous un participant à PROSPECT + (2020 - )?**

- Oui, je participe comme mentor.
- Oui, je participe comme mentee.
- Non, je ne suis pas un participant PROSPECT +

**A7. Si «Oui» dans quel groupe étiez vous ?** \_\_\_\_\_

**A8. Avez-vous participé à la première édition de PROSPECT (2017-2020) ?**

- Oui, j'étais mentor.
- Oui, j'étais mentee.



- Non, je n'ai pas participé à PROSPECT.

**A9. Quelle est votre expérience professionnelle sur les questions liées à l'énergie (nombre d'années travaillées dans ce domaine) ?**

- Moins de 3 ans
- De 3 à 5 ans
- De 6 à 10 ans
- Plus de 10 ans

**A10. Quelle option décrit votre identité de genre?**

- Homme
- Femme
- Autre
- Préfère ne pas répondre

**A15. Avez-vous une expérience professionnelle dans le domaine de l'énergie durable ?**

- Oui
- Non

**B. Domaine thématique et contexte de votre organisation**

**B1. Nombre d'habitants dans votre collectivité ou région ?**

- <5.000 (très petite ville)
- 5.000-50.000 (petite et moyenne ville)
- 50.000-100.000 (petit centre urbain)
- 100.000-250.000 (centre moyen urbain)
- 250.000-1.000.000 (grand centre urbain)
- >1.000.000 (zone métropolitaine)

**B2. Votre ville a-t-elle adopté/élaboré un plan d'action pour l'énergie et le climat (SEAP/SECAP) ou équivalent ?**

- Oui
- Non
- Autre

**B3. Si «Autre», merci de préciser: \_\_\_\_\_**

Dans PROSPECT +, nous utilisons les 5 domaines thématiques suivants pour catégoriser les projets des participants :



The **public buildings** thematic area covers buildings and facilities owned, managed, or controlled by public authorities. Facilities refer to energy-consuming entities that are not buildings, such as wastewater treatment plants.

The **private buildings** thematic areas covers buildings owned, managed, or controlled by private individuals or corporations. These refer primarily to the tertiary sector (services), such as private companies, banks, commercial, and retail activities, hospitals, etc. and residential buildings, including social housing

The **public lighting** thematic areas covers the provision of public lighting (e.g., street lighting and traffic lights) owned or operated by public authorities. Non-municipal public lighting is under private buildings

The **transport** thematic areas covers the provision of and management of mass transit systems by public authorities, as well as private transport

The **cross-sectoral** thematic areas covers all those interventions falling under two or more thematic areas; climate change adaptation; local electricity production (e.g., wind power, hydroelectric power, photovoltaic); and local heat/cold (e.g., combined heat and power and district heating plant).

**B4. Pour quel domaine thématique souhaiteriez-vous remplir le questionnaire ?**

- Bâtiments publics
- Bâtiments privés
- Éclairage public
- Transports / mobilité
- Actions transversales

**B5. Votre municipalité ou régions a-t-elle mis en œuvre des mesures en matière d'efficacité énergétique/d'énergie durable dans ce domaine thématique au cours des 5 dernières années ?**

- Oui
- Non
- La mise en œuvre a commencé, mais n'est pas encore achevée.

**B6. Votre municipalité ou région a-t-elle mis en œuvre des mesures en matière d'efficacité énergétique/d'énergie durable dans l'un des autres domaines thématiques de PROSPECT+ au cours des 5 dernières années?**

- Oui
- Non
- La mise en œuvre a commencé, mais n'est pas encore achevée.

**B7. Si oui, dans quels domaines ?**

- Bâtiments publics
- Bâtiments privés
- Éclairage public
- Transports / mobilité
- Actions transversales

**B8. Votre municipalité ou région prévoit-elle de mettre en œuvre au moins une mesure en matière d'efficacité énergétique/d'énergie durable dans le domaine thématique pour lequel vous remplissez le questionnaire au cours des 2 prochaines années ?**

- Oui
- Non



**B9. Votre municipalité ou région prévoit-elle de mettre en œuvre au moins une mesure en matière d'efficacité énergétique/d'énergie durable dans l'un des autres domaines thématiques de PROSPECT+ au cours des 2 prochaines années ?**

- Oui
- Non

**B10. Existe-t-il une méthode de prise de décision ?**

- Oui
- Non

**B11. Si "Oui", merci de décrire laquelle ?**

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**B12. Si "Non", merci de décrire la manière dont les décisions sont prises quant à l'ordre dans lequel les projets sont mis en œuvre.**

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Les questions suivantes portent sur les différents obstacles et moteurs qui peuvent être identifiés dans les projets d'énergie durable.

Préalablement à cette enquête, nous avons procédé à une analyse documentaire complète des différents facteurs susceptibles d'avoir une incidence positive ou négative sur la mise en œuvre de projets dans le domaine de l'énergie durable, en mettant l'accent sur les cinq domaines thématiques du [projet Horizon 2020 PROSPECT+](#).

Vos réponses nous aideront à réaliser une analyse des atouts, faiblesses, opportunités et menaces (SWOT), dans le cadre de laquelle nous classerons les différents facteurs identifiés en fonction de leurs caractéristiques internes ou externes, selon leur importance.

Merci d'indiquer les différents facteurs présents en tant qu'obstacle ou moteur dans votre contexte, en répondant par Oui ou par Non, ainsi que le degré d'importance de ces facteurs (1 = pas important du tout, 5 = extrêmement important), selon votre propre perception et expérience.

**B13. Répondez-vous à ce questionnaire en ayant à l'esprit un projet spécifique dans le domaine thématique que vous avez choisi plus haut ?**

- Oui, je réponds au questionnaire pour un projet qui a été mis en œuvre par le passé.
- Oui, je réponds au questionnaire sur la base d'un projet en cours d'élaboration.
- Non, je réponds au questionnaire sur la base de mon expérience dans ce domaine thématique, sans avoir à l'esprit un projet spécifique.

### **C. Obstacles aux projets dans le domaine de l'énergie durable**

Veillez 1. indiquer si les facteurs suivants constituent des obstacles entravant la mise en œuvre de vos projets dans le domaine de l'énergie durable et 2. évaluer dans quelle mesure ils peuvent avoir une incidence sur la mise en œuvre de vos projets **sur la base de propre perception ou expérience** (indépendamment du fait que cet obstacle soit apparu ou non dans votre projet)..

Pour évaluer l'importance de chaque obstacle, veuillez utiliser la notation suivante :

- 1 = pas du tout important : le facteur n'entrave pas la mise en oeuvre du projet.
- 2= peu important
- 3 = assez important, ce facteur retarde ou limite la mise en oeuvre du projet
- 4 = important



- 5= très important : ce facteur est déterminant et empêche la mise en œuvre du projet

<b>Obstacles économiques et financiers</b>	<b>Existence</b>	<b>Importance</b>				
<b>C1.</b> Manque de moyens financiers et d'accès aux sources de financement	Oui/Non	1	2	3	4	5
<b>C2.</b> Manque de ressources (par exemple, manque de ressources humaines, ressources limitées pour évaluer les possibilités, manque de temps et de ressources pour trouver les bonnes informations)	Oui/Non	1	2	3	4	5
<b>C3.</b> Investissement initial nécessaire trop élevé et/ou trop longue période d'amortissement	Oui/Non	1	2	3	4	5
<b>C4.</b> Manque d'incitations économiques	Oui/Non	1	2	3	4	5
<b>C5.</b> Problème principal-agent (Le problème "principal-agent" se produit lorsqu'une personne ou une entité (l'agent) est en mesure de prendre des décisions au nom d'une autre personne ou entité (le principal) ayant une incidence sur celle-ci. Ce dilemme apparaît quand l'agent est motivé à agir dans son propre intérêt, contraire à celui du principal. )	Oui/Non	1	2	3	4	5
<b>C6.</b> Le projet ne génère pas de bénéfices	Oui/Non	1	2	3	4	5
<b>C7.</b> Faibles économies d'énergie ou financières escomptées	Oui/Non	1	2	3	4	5
<b>C8.</b> Autres coûts (par exemple, coûts cachés et coûts de transaction)	Oui/Non	1	2	3	4	5
<b>C9.</b> Interférence dans le travail quotidien (perturbation et facteur de tracas anticipé)	Oui/Non	1	2	3	4	5
<b>C10.</b> Crise financière (contexte économique défavorable, par exemple : un taux d'inflation élevé)	Oui/Non	1	2	3	4	5
<b>C11.</b> Instabilité des prix de l'énergie	Oui/Non	1	2	3	4	5
<b>C12.</b> Situation économique/financière du porteur du projet défavorable	Oui/Non	1	2	3	4	5
<b>C13.</b> Incertitude sur les risques liés aux aspects économiques du projet (par exemple, incertitude quant aux économies réalisables, effet rebond, etc.)	Oui/Non	1	2	3	4	5

<b>Obstacles à la connaissance et à l'information</b>	<b>Existence</b>	<b>Importance</b>				
<b>C14.</b> Manque d'information, de connaissances et de sensibilisation	Oui/Non	1	2	3	4	5
<b>C15.</b> Activité peu prioritaire	Oui/Non	1	2	3	4	5
<b>C16.</b> Méfiance (manque de confiance dans les audits énergétiques et les mesures fondées sur ceux-ci, méfiance à l'égard des informations, manque de confiance dans les partenaires tels que les entreprises de service énergétique, méfiance à l'égard des nouvelles technologies)	Oui/Non	1	2	3	4	5
<b>C17.</b> Manque de communication et de promotion efficace du projet	Oui/Non	1	2	3	4	5

<b>Obstacles sociaux, culturels et comportementaux</b>	<b>Existence</b>	<b>Importance</b>				
<b>C18.</b> Résistance au changement, inertie et/ou manque d'intérêt	Oui/Non	1	2	3	4	5
<b>C19.</b> Manque d'acceptation par le public, manque de prise en compte du statut social, des normes sociales et de l'influence du groupe en tant qu'obstacle	Oui/Non	1	2	3	4	5
<b>C20.</b> Rationalité limitée (Les individus ne prennent pas toujours des décisions totalement rationnelles. Les limites à une décision rationnelle peuvent être liées à la difficulté même de la décision à prendre, à la capacité cognitive du décideur et au temps disponible pour prendre la décision. De ce point de vue, les décideurs agissent en tant qu'acteurs de satisfaction, en recherchant une solution satisfaisante, basée sur leurs moyens existants, plutôt qu'une solution optimale.)	Oui/Non	1	2	3	4	5
<b>C21.</b> Réticence (à financer l'efficacité énergétique, à contracter des dettes)	Oui/Non	1	2	3	4	5
<b>C22.</b> Attente de projets plus matures	Oui/Non	1	2	3	4	5



<b>C23.</b> Réticence liée au manque de confiance dans la technologie et/ou à une expérience passée négative	Oui/Non	1	2	3	4	5
<b>Obstacles politiques et réglementaires</b>						
<b>C24.</b> Absence de réglementation et de législation et/ou politique contradictoire	Oui/Non	1	2	3	4	5
<b>C25.</b> Modifications fréquentes de la législation et/ou du cadre réglementaire	Oui/Non	1	2	3	4	5
<b>C26.</b> Absence d'exigences obligatoires et de mise en vigueur	Oui/Non	1	2	3	4	5
<b>C27.</b> Incertitudes quant aux aspects politiques susceptibles d'influencer le projet	Oui/Non	1	2	3	4	5
<b>Obstacles institutionnels/organisationnels</b>						
<b>C28.</b> Pratiques liées au cadre institutionnel	Oui/Non	1	2	3	4	5
<b>C29.</b> Manque de rationalisation des processus et procédures complexes/difficiles	Oui/Non	1	2	3	4	5
<b>C30.</b> Bureaucratie	Oui/Non	1	2	3	4	5
<b>C31.</b> Absence de vision à long terme, de plans et de stratégies concernant l'avenir des infrastructures publiques	Oui/Non	1	2	3	4	5
<b>C32.</b> Pratiques budgétaires (par exemple : méthode de financement concurrentielle, règles de budgétisation publique)	Oui/Non	1	2	3	4	5
<b>C33.</b> Manque de gestion et de soutien public	Oui/Non	1	2	3	4	5
<b>C34.</b> Processus décisionnel (par exemple, aspect politique dans les problèmes de décision collective, délais courts des décisions)	Oui/Non	1	2	3	4	5
<b>C35.</b> Manque de pouvoir pour lancer des actions en faveur de l'énergie propre et de l'efficacité énergétique	Oui/Non	1	2	3	4	5
<b>C36.</b> Verrouillage contractuel (partenariat/contrats existants avec des fournisseurs)	Oui/Non	1	2	3	4	5
<b>Obstacles techniques et technologiques</b>						
<b>C37.</b> Manque de capacités et de compétences techniques	Oui/Non	1	2	3	4	5
<b>C38.</b> Manque de guidance et de bonnes pratiques	Oui/Non	1	2	3	4	5
<b>C39.</b> Complexité des projets et des procédures	Oui/Non	1	2	3	4	5
<b>C40.</b> Infrastructures inefficaces (par exemple, manque d'infrastructures cyclables/piétonnières, manque de transport ou d'infrastructures ferroviaires, manque d'infrastructures de recharge des véhicules électriques)	Oui/Non	1	2	3	4	5
<b>C41.</b> Propriété conjointe	Oui/Non	1	2	3	4	5
<b>C42.</b> Disponibilité des technologies et des capacités de maintenance	Oui/Non	1	2	3	4	5
<b>C43.</b> Infrastructures publiques peu satisfaisantes	Oui/Non	1	2	3	4	5
<b>C44.</b> Manque de données	Oui/Non	1	2	3	4	5
<b>C45.</b> Problèmes et limitations techniques (y compris géographiques et logistiques)	Oui/Non	1	2	3	4	5
<b>C46.</b> Insuffisance de la mesure et de la vérification des économies engendrées par le projet	Oui/Non	1	2	3	4	5
<b>C47.</b> Risques et incertitude sur les aspects techniques et technologiques du projet	Oui/Non	1	2	3	4	5



**C48. Avez-vous rencontré un autre obstacle lors de la planification ou de la mise en œuvre d'un projet d'énergie durable qui n'a pas été mentionné précédemment ? Si oui, merci de l'indiquer ci-dessous ainsi que l'importance de l'obstacle, entre parenthèses.**

Par exemple : manque de financement (4)

#### **D. Moteurs des projets dans le domaine de l'énergie durable**

Veillez 1. indiquer si les facteurs suivants **facilitent** la mise en œuvre de vos projets dans le domaine de l'énergie durable dans votre contexte et 2. évaluer leur **importance** en terme d'incidence sur la mise en œuvre de projets dans le domaine de l'énergie durable **sur la base de votre expérience ou de votre perception** (que ce facteur soit apparu ou non dans votre projet).

Pour évaluer l'importance de chaque facteur, veuillez utiliser la notation suivante :

- 1 = pas du tout important, le facteur ne facilite pas la mise en oeuvre du projet.
- 2= peu important
- 3 = assez important, le facteur facilite l'amélioration du projet dans une certaine mesure.
- 4 = important
- 5= très important, le facteur favorise la mise en œuvre du projet

#### **Moteurs économiques et financiers**

	<b>Existence</b>	<b>Importance</b>				
<b>D1.</b> Disponibilité des financements et accès aisé aux sources de financement	Oui/Non	1	2	3	4	5
<b>D2.</b> Question Disponibilité d'incitations économiques	Oui/Non	1	2	3	4	5
<b>D3.</b> Anticipation des économies d'énergie ou financières	Oui/Non	1	2	3	4	5
<b>D4.</b> Augmentation de la valeur du bien	Oui/Non	1	2	3	4	5
<b>D5.</b> Question Prix élevés de l'énergie (électricité, essence, diesel, etc.)	Oui/Non	1	2	3	4	5

#### **Moteurs liés aux connaissances et à l'information**

	<b>Existence</b>	<b>Importance</b>				
<b>D6.</b> Information, connaissance et sensibilisation	Oui/Non	1	2	3	4	5
<b>D7.</b> La durabilité et l'efficacité énergétique sont des priorités de la municipalité	Oui/Non	1	2	3	4	5
<b>D8.</b> Campagnes de communication et de promotion du projet	Oui/Non	1	2	3	4	5

#### **Facteurs sociaux, culturels et comportementaux**

	<b>Existence</b>	<b>Importance</b>				
<b>D9.</b> Acceptation/approbation du public, prise en considération du statut social et influence du groupe en tant que facteur d'incitation aux investissements dans l'efficacité énergétique	Oui/Non	1	2	3	4	5
<b>D10.</b> Amélioration du confort et la qualité de vie (par exemple, conditions de confort thermique, conditions acoustiques, etc.)	Oui/Non	1	2	3	4	5

#### **Facteurs politiques et réglementaires**

	<b>Existence</b>	<b>Importance</b>				
<b>D11.</b> Existence de réglementations et de législation (par exemple, instruments politiques, labellisation)	Oui/Non	1	2	3	4	5
<b>D12.</b> Exigences obligatoires et mise en vigueur effective	Oui/Non	1	2	3	4	5



### Moteurs institutionnels/organisationnels

Existence Importance

**D13.** Vision à long terme, plans et stratégies pour l'avenir des infrastructures publiques Oui/Non 1 2 3 4 5

**D14.** Partenariats (Partenariat avec d'autres organisations communautaires telles que les entreprises municipales, les ONG et les organisations de protection de l'environnement.) Oui/Non 1 2 3 4 5

### Moteurs techniques et technologiques

Existence Importance

**D15.** Disponibilité des capacités et compétences techniques Oui/Non 1 2 3 4 5

**D16.** Disponibilité de guidance et de bonnes pratiques Oui/Non 1 2 3 4 5

**D17.** La mesure et la vérification des économies d'énergie/financières favorisent la mise en oeuvre du projets Oui/Non 1 2 3 4 5

**D18.** Y a-t-il d'autres facteurs ayant une incidence positive sur la planification ou la mise en oeuvre du projet qui n'étaient pas mentionnés précédemment ? Si oui, merci de le décrire ci-dessous et d'indiquer son importance entre parenthèses.

Par exemple : existence d'incitations économiques (4)

### E. Autres

**E1.** Souhaitez-vous recevoir un retour d'information sur la base de vos réponses ?

- Oui
- Non

**E2.** Si oui, merci d'indiquer le nom du facilitateur de votre groupe PROSPECT+.

**E3.** Merci d'indiquer votre adresse mél. \_\_\_\_\_

**E4.** Nous tenons à vous informer de nos résultats une fois que nous aurons terminé l'analyse des données de l'enquête. Si vous acceptez de nous entendre à nouveau à cette fin, veuillez indiquer votre adresse mél ci-dessous. Vos données à caractère personnel ne seront pas liées au questionnaire. \_\_\_\_\_

Merci d'avoir contribué à notre enquête ! Si vous avez des questions générales ou des commentaires concernant l'enquête ou nos projets, n'hésitez pas à nous contacter !



## Appendix II

Stengths	Public Buildings	Private Buildings	Public lighting	Transport	Cross sectoral
Anticipated energy/ costs savings	3.85	3.81	4.30	3.65	3.93
Information, knowledge and awareness	3.66	3.59	3.20	3.78	3.40
Availability of (technical) capacities and skills	3.54	3.71	3.12	4.18	3.11
Increased property value		3.45			
Measurement and verification of savings can drive engagement in retrofitting activities	3.43	3.53	4.00	3.53	3.15
Improved comfort enhancing the life quality (e.g, thermal comfort conditions, acoustic conditions etc.)	3.50	3.75	3.70	3.44	2.99
Availability of guidance and best practices	2.91	3.40	3.04	3.36	3.34
Partnerships	2.70	3.22	3.12	3.78	3.09

Weaknesses	Public Buildings	Private Buildings	Public lighting	Transport	Cross sectoral
Lack of resources (e.g., lack of human resources, limited resources to assess opportunities, lack of time and effort in finding information)	3.25	3.62	3.60	3.74	4.02
High initial investment and/or long payback period	3.60	3.58	4.30	3.71	2.92
Complexity of projects and procedures	2.99	3.10	3.42	3.36	3.29
Lack of information, knowledge and awareness	2.55	2.90	3.44	3.56	3.07
Risks & uncertainty related to economic aspects of the projects (e.g., uncertainty about the savings, rebound effects, etc.)	2.39	3.71	2.80	3.16	2.47
Resistance to change, inertia and/or lack of interest	2.34	3.58	2.80	3.00	2.49
Lack of (technical) capacities and skills	2.45	1.93	2.46	2.44	2.65
Weak measurement and verification of savings	2.51	2.21	2.28	3.49	1.91
Availability of technology and maintenance capabilities	2.47	2.24	2.96	2.40	2.09
Risks & uncertainty related to technical and technological aspects of the project	2.27	1.97	2.73	2.35	1.68
Unfavourable economic/ financial status of the project implementer	2.22	1.45	2.66	2.44	1.92
Lack of guidance and best practices	2.06	1.72	2.87	2.01	2.13
Other Costs (e.g., hidden and transaction costs)	2.20	1.42	2.48	1.68	2.16

Lack of management and government support	1.90	2.06	2.80	1.70	1.83
Unwillingness (to finance energy efficiency, to incur dept)	1.79	2.85	2.66	1.78	1.49
Mistrust (i.e., lack of trust in energy audits and measures based on them, mistrust of information, lack of trust in ESCOs, mistrust of new technologies)	1.73	2.83	2.94	1.73	1.33
Interference in daily work (i.e., disruption in the ordinary life and anticipated hassle factor)	1.60	1.80	2.04	2.40	1.69
The project does not occur profit		1.71			
Lack of power for initiating clean energy and energy efficiency actions	1.58	1.75	2.66	1.50	1.61
Split incentives and principal - agent problem	1.48	1.80	2.79	1.92	1.00
Low anticipated energy/cost savings	1.43	1.00	2.52	1.42	1.49
Joint ownership	1.48	1.55	1.32	1.63	1.05
Contractual lock-in (i.e., existing partnership/contracts with suppliers)	1.25	1.36	1.36	1.12	1.42
Reluctance, lack of confidence in technology and/or negative past experience	1.25	1.87	1.32	0.66	0.78

<b>Opportunities</b>	<b>Public Buildings</b>	<b>Private Buildings</b>	<b>Public lighting</b>	<b>Transport</b>	<b>Cross sectoral</b>
High energy prices (e.g., electricity, gasoline, diesel)	3.97	3.67	4.50	3.56	3.94
Sustainability and energy efficiency as a priority of the municipality	3.79	3.45	3.69	4.14	3.56
Existence of regulation and legislation (e.g., policy instruments, labels & codes)	3.69	4.08	3.42	3.28	3.43
Existence of a long-term vision, plans and strategies regarding the future of public infrastructure	3.48	3.95	3.78	3.83	3.41
Availability of (economic) incentives	3.19	2.96	3.60	3.61	3.26
Public acceptance/ approval, social status consideration and group influence as a push factor to energy efficiency investments	3.01	3.62	2.45	3.83	3.39
Availability of funding and easy access to funding sources	3.03	3.55	2.28	3.64	3.40
Existence of mandatory requirements and effective enforcement	3.08	3.51	2.59	3.23	3.28
Dissemination and promotion campaigns	2.55	2.20	2.59	3.40	2.61



Threats	Public Buildings	Private Buildings	Public lighting	Transport	Cross sectoral
Lack of funding and access to funding sources	3.71	3.63	4.14	3.92	3.66
Bureaucracy	3.54	4.19	3.78	4.25	3.04
Inefficient infrastructure (e.g., lack of cycling/walking infrastructure, lack of rail transportation/infrastructure, lack of infrastructure for recharging of electric vehicles)				3.44	
Instability of energy prices	3.40	2.81	4.40	3.78	2.97
Lack of streamlined process and complex/difficult procedures	3.02	3.40	3.80	3.16	2.68
Financial Crisis (the general economy is on a downward slope e.g., high inflation rate)	2.99	2.78	3.78	3.20	2.88
Public budgeting practices (e.g., competitive funding method, the rules of public budgeting)	2.97	3.27	4.30	3.16	2.56
Decision making process (e.g., political aspect in decision collective decision problems, short timeframe of decisions)	2.61	2.85	3.28	3.11	2.72
Lack of (economic) incentives	2.62	3.12	3.30	3.56	2.38
Lack of data	2.81	1.38	2.45	3.40	2.16
Frequent changes in legislation and/ or regulatory framework	2.43	2.65	2.45	1.84	2.54
Risks & uncertainty related to policy aspects that can influence the project	2.34	2.45	3.24	2.63	2.23
Institutional practice (i.e., issues related to institutional framework)	2.41	2.18	3.60	2.74	2.10
Lack of efficient dissemination and promotion	2.02	3.48	2.28	2.35	2.33
Lack of regulation and legislation and/or conflicting policy	2.33	1.77	2.96	1.55	2.21
Lack of a long-term vision, plans and strategies regarding the future of public infrastructure	2.03	2.41	3.20	1.93	2.15
Low satisfaction with public infrastructure	1.94	0.71	2.59	3.49	1.71
Lack of mandatory requirements and enforcement	1.91	1.77	2.16	2.13	1.71
Bounded rationality	1.75	1.90	2.17	1.79	1.64
Technical problems and limitations (including geographical and logistical issues)	1.84	1.14	2.38	2.74	1.34
Lack of public acceptance, social status consideration, social norms and group influence as a barrier	1.60	1.40	1.75	2.63	1.68
Low priority activity	1.22	1.82	3.42	1.75	1.90
Waiting for more mature products	1.41	1.22	1.65	1.37	1.45



# PROSPECT+



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